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OF THE

LEPIDOPTERA PHALÆNÆ

IN THE

BRITISH MUSEUM.

VOLUME V.

LONDON:
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CATALOGUE

OF THE

NOCTUIDÆ

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SMITHSONIAN
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PREFACE.

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The subject of Vol. V. of the 'Catalogue of Moths' is the classification of the *Hadeninæ*, the second of the fifteen subfamilies of the *Noctuidæ*, 946 species belonging to 78 genera being described in it. The subfamily is characterised by its trifid neuration of the hind wing combined with the hairy clothing of the eyes, and forms an extremely natural and well-marked group of species.

Sir George Hampson has again to thank all those who have helped him with the earlier Volumes of the Catalogue, for the loan of specimens, and assistance with the present Volume, and, in addition, Dr. Wm. Barnes, of Decatur, Illinois, U.S.A., for the gift of a very large number of species of N. American *Noctuidæ*, new to the British Museum Collection, and Dr. A. G. Mayer, of the Brooklyn Institute, has again sent drawings, made by Mr. H. B. Judy, of types in the Neumœgen Collection. Plate XCVI. will appear with Vol. VI. of the Catalogue.

E. RAY LANKESTER,
Director.

British Museum (Natural History),
February 24th, 1905.

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CATALOGUE

OF

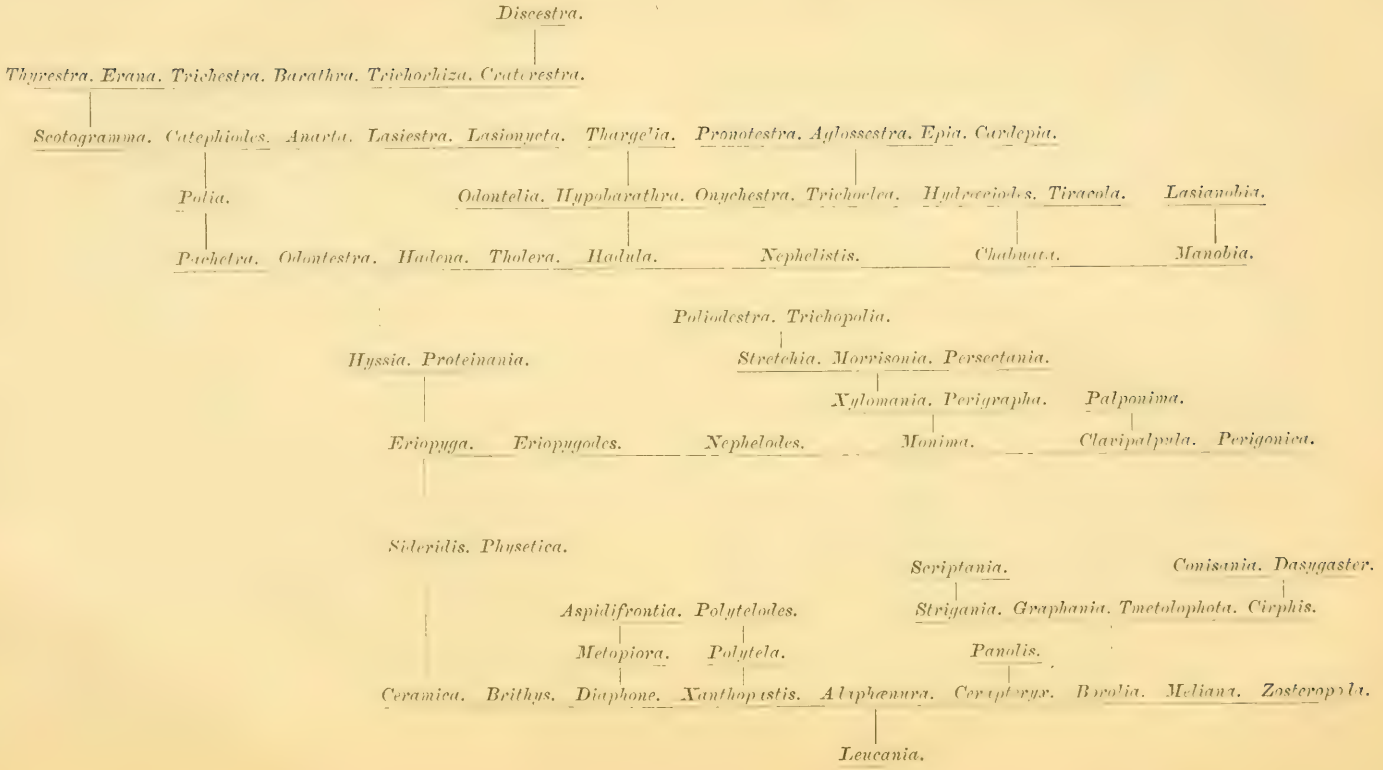
LEPIDOPTERA PHALÆNÆ.

Family NOCTUIDÆ.

Subfamily HADENINÆ.

Proboscis usually well-developed, sometimes aborted; palpi usually short, upturned or porrect; frons often with rounded prominence with corneous plate below it, or with corneous processes of various forms; eyes hairy, sometimes overhung by long cilia; antennæ usually ciliated, often pectinated or serrate; thorax clothed with hair and scales when there are usually crests on the pro- and metathorax or a ridge-like dorsal crest, or clothed with hair only; tibiæ without spines, the fore tibia rarely with terminal spine; the proximal joints of fore tarsi sometimes with curved claw-like spines; abdomen usually with series of dorsal crests or one crest at base. Wings usually broad, the termen rounded or crenulate, rarely slightly angled at middle; fore wing with vein 1 *a* weak, not anastomosing with 1 *b*, 1 *c* absent; 2 from middle of cell; 3 and 5 from near lower angle; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole, in *Erana* with 7, 8, 9 stalked; 10 from cell. Hind wing with veins 1 *a* & *b* present, 1 *c* absent; 3, 4 from lower angle of cell; 5 obsolescent from or from just below middle of discocellulars; 6, 7 from upper angle or shortly stalked; 8 arising free, then bent down and touching the cell, then again diverging.

Phylogeny of the Hadeninæ.


Discestra.
Thyrestra. Erana. Trichestra. Barathra. Trichorhiza. Craterestra.
Scotogramma. Catephioides. Anarta. Lasiestra. Lasionycta. Thargelia. Pronotestra. Aglossestra. Epia. Cardepia.
Polia.
Odontelia. Hypobarathra. Onychestra. Trichoclea. Hydrœciodes. Tiracola. Lasianobia.
Pachetra. Odontestra. Hadena. Tholera. Hadula. Nephelistis. Chabuata. Manobia.
Poliodestra. Trichopolia.
Hyssia. Proteinania. Stretchia. Morrisonia. Persectania.
Xylomania. Perigrapha. Palponima.
Eriopyga. Eriopygodes. Nephelodes. Monima. Clavipalpula. Perigonica.
Sideridis. Physetica.
Scriptania. Conisania. Dasygaster.
Aspidifrontia. Polytelodes. Strigania. Graphania. Tmetolophota. Cirphis.
Metopiora. Polytela. Panolis.
Ceramica. Brithys. Diaphone. Xanthopastis. Aliphænura. Ceriopteryx. Bivolia. Meliana. Zosteropoda.
Leucania.

In several genera the males often have secondary sexual tufts of hair or fans of scales on thorax, legs, or abdomen, and in the genus *Eriopyga* patches of androconia on the wings of very diverse forms; in *Cirphis* the underside is sometimes clothed with silvery metallic scales. The species of the genus *Monima* all appear in the early spring.

Fig. 1.—Larva of *Polia pisi*. ½.

Larva smooth, the warts with 1 hair; all the prolegs present, the 12th somite with more or less developed dorsal hump. In the *Hadena*-group of *Polia* the larvæ all feed on *Caryophyllaceæ*, *Silene*, *Lychnis*, *Dianthus*, etc., mostly in the seed-pods, and the females have the ovipositor long and exserted for penetrating the tissues of the plants; in *Leucania* and allied genera the larvæ all feed on *Gramineæ*.

Key to the Genera.

A. Eyes small, reniform.
  a. Thorax clothed with hair and hair-like scales ... ANARTA, p. 37.
  b. Thorax clothed with hair only ..... PANOLIS, p. 461.
B. Eyes large, rounded.
  a. Fore tibia with terminal claw.
    a^1. Frons with rounded prominence with corneous plate below it ..... THARGELIA, p. 220.
    b^1. Frons without prominence.
      a^2. Abdomen with dorsal series of crests ..... BARATHRA, p. 11.
      b^2. Abdomen with dorsal crest on 1st segment only..... HYPOBARATHRA, p. 221.
  b. Fore tibia without terminal claw.
    a^1. Fore tarsus with long curved claw-like spines on outer side of 1st joint.
      a^2. Fore tibia with spine on outer side near extremity ..... CONISANIA, p. 472.
      b^2. Fore tibia without spine.
        a^3. Frons with truncate conical prominence with vertical ridge at middle and corneous plate below it ..... PRONOTESTRA, p. 224.
        b^3. Frons with truncate conical prominence with corneous plate below it.
          a^4. Proboscis aborted, minute..... AGLOSSESTRA, p. 225.
          b^4. Proboscis fully developed.
            a^5. Frontal prominence occupying lower part of frons..... EPIA, p. 226.
            b^5. Frontal prominence reniform, in middle of frons..... CARDEPIA, p. 234.
        c^3. Frons with rounded prominence with corneous plate below it ..... TRICHOCLEA, p. 236.
        d^3. Frons without prominence.
          a^4. Eyes overhung by long cilia ..... LASIANOBIA, p. 274.

b^4. Eyes not overhung by cilia.
a^5. Thorax clothed with hair and hair-like scales and with spreading crests ..... MANOBIA, p. 276.
b^5. Thorax clothed with hair only and without crests..... PHYSETICA, p. 444.
b^1. Fore tarsus with short thick claws on 1st three joints; frons with rounded prominence with curved corneous plate below it from middle of frons and a plate below frons produced to lateral wings ..... ONYCHESTRA, p. 223.
c^1. Fore tarsus without claw-like spines on outer side of 1st joint.
a^2. Eyes overhung by long cilia.
a^3. Proboscis aborted, minute ..... TRICHOPOLIA, p. 361.
b^3. Proboscis fully developed.
a^4. Tegulæ dorsally produced into a ridge.
a^5. Abdomen with dorsal series of crests..... POLIODESTRA, p. 359.
b^5. Abdomen with dorsal crest on 1st segment only.
a^6. Palpi fringed with long hair in front ... STRETCHIA, p. 363.
b^6. Palpi fringed with short hair in front ... HYDRŒCIODES, p. 253.
b^4. Tegulæ not produced into a ridge.
a^5. Abdomen with dorsal series of crests.
a^6. Thorax clothed chiefly with scales.
a^7. Thorax with ridge-shaped dorsal crest. THYRESTRA, p. 6.
b^7. Thorax with spreading crests ..... TRICHESTRA, p. 8.
b^6. Thorax clothed with hair and hair-like scales ..... LASIONYCTA, p. 53.
c^6. Thorax clothed with hair only ..... LASIESTRA, p. 47.
b^5. Abdomen with dorsal crest on 1st segment only ..... SCRIPTANIA, p. 464.
c^5. Abdomen without dorsal crests ..... STRIGANIA, p. 466.
b^2. Eyes not overhung by long cilia.
a^3. Proboscis aborted, minute.
a^4. Abdomen with dorsal crest on 1st segment.
a^5. Frons with disk-shaped prominence with central truncate prominence ..... ASPIDIFRONTIA, p. 450.
b^5. Frons with rounded prominence with corneous plate below it ..... ODONTELIA, p. 219.
c^5. Frons without prominence.
a^6. Pro- and metathorax with spreading crests ..... THOLERA, p. 216.
b^6. Pro- and metathorax without crests..... BRITHYS, p. 447.
b^4. Abdomen without dorsal crest.
a^5. Frons with disk-shaped prominence with central truncate process ..... METOPIORA, p. 452.
b^5. Frons with prominence with lateral walls and roughened or convoluted centre..... DIAPHONE, p. 453.
c^5. Frons with rounded roughened prominence with corneous plate below it.
a^6. Head and thorax clothed chiefly with scales ..... POLYTELODES, p. 454.
b^6. Head and thorax clothed with hair only..... POLYTELA, p. 456.
d^5. Frons without prominence ..... XANTHOPASTIS, p. 458.
b^3. Proboscis fully developed.
a^4. Frons with truncate conical prominence.
a^5. Abdomen with dorsal series of crests.
a^6. Frons with semilunar corneous prominence ..... DISCESTRA, p. 14.
b^6. Frons with circular prominence ..... CRATERESTRA, p. 17.

b^5. Abdomen with dorsal crest on 1st segment only.
a^6. Thorax clothed with hair and hair-like scales; palpi with the 3rd joint short . GRAPHANIA, p. 468.
b^6. Thorax clothed with hair only; palpi with the 3rd joint long and dilated at extremity ..... PALPONIMA, p. 432.
b^4. Frons with rounded prominence excised below above the corneous plate ..... TRICHORHIZA, p. 13.
c^4. Frons with slight rounded prominence with corneous plate below it.
a^5. Abdomen with dorsal series of crests.
a^6. Head and thorax clothed chiefly with scales.
a^7. Palpi upturned, the 3rd joint long ... CATEPHIODES, p. 36.
b^7. Palpi oblique, the 3rd joint short ..... SCOTOGRAMMA, p. 25.
b^6. Head and thorax clothed with hair and hair-like scales ..... DASYGASTER, p. 473.
b^5. Abdomen with dorsal crest on 1st segment only.
a^6. Thorax clothed chiefly with scales.
a^7. Palpi upturned, reaching vertex of head ..... NEPHELISTIS, p. 250.
b^7. Palpi short, oblique ..... ODONTESTRA, p. 205.
b^6. Thorax clothed with hair and hair-like scales.
a^7. Tegulæ dorsally produced into a ridge. PERSECTANIA, p. 386.
b^7. Tegulæ not dorsally produced into a ridge ... . HADULA, p. 243.
c^5. Abdomen without dorsal crest..... MELIANA, p. 576.
d^4. Frons without prominence.
a^5. Tegulæ dorsally produced into a ridge.
a^6. Abdomen with dorsal series of crests ... MORRISONIA, p. 336.
b^6. Abdomen with dorsal crest on 1st segment only.
a^7. Thorax with dorsal ridge-like crest ... PERIGRAPHA, p. 403.
b^7. Pro- and metathorax with spreading crests..... XYLOMANIA, p. 389.
c^6. Abdomen without dorsal crest ..... MONIMA, p. 409.
b^5. Tegulæ not produced into a ridge.
a^6. Thorax clothed chiefly with scales.
a^7. Abdomen with dorsal series of crests.
a^8. Fore wing narrow; veins 7, 8, 9 stalked ..... ERANA, p. 7.
b^8. Fore wing broad, triangular; vein 9 from 10 anastomosing with 8 to form the areole ..... POLIA, p. 60.
b^7. Abdomen with dorsal crest on 1st segment only..... HADENA, p. 208.
b^6. Thorax clothed with hair and hair-like scales, sometimes with a few scales on upper edge of patagia.
a^7. Abdomen with dorsal series of crests.
a^8. Prothorax with triangular ridge-like crest ..... TIRACOLA, p. 257.
b^8. Prothorax with spreading crest..... PACHETRA, p. 203.
b^7. Abdomen with dorsal crest on 1st segment only.
a^8. Palpi with the 3rd joint long and porrect ..... PROTEINANIA, p. 290.

b^8. Palpi with the 3rd joint short.
a^9. Prothorax with dorsal ridge-like crest ..... Chabuata, p. 259.
b^9. Prothorax with spreading crest.
a^{10}. Thorax clothed chiefly with hair-like scales ..... Hyssia, p. 278.
b^{10}. Thorax clothed almost entirely with hair ..... Cirphis, p. 478.
b^7. Abdomen without dorsal crests.
a^8. Thorax clothed chiefly with hair-like scales; fore wing with the termen erect, rounded ..... Eriopyga, p. 291.
b^8. Thorax clothed almost entirely with hair; fore wing with the termen obliquely curved ..... Borolia, p. 555.
c^6. Thorax clothed with hair only,
a^7. Abdomen with dorsal series of crests.
a^8. Pro- and metathorax with spreading crests ..... Nephelodes, p. 356.
b^8. Pro- and metathorax without crests... Adaphænura, p. 460.
b^7. Abdomen with dorsal crest on 1st segment only.
a^8. Palpi with the 3rd joint long and dilated at extremity ..... Clavipalpula, p. 433.
b^8. Palpi with the 3rd joint short.
a^9. Thorax with dorsal ridge-like crest... Perigonica, p. 434.
b^9. Prothorax with divided crest ..... Tmetolophota, p. 470.
c^9. Prothorax with spreading crest ..... Sideridis, p. 436.
d^9. Thorax without distinct crests.
a^{10}. Fore wing with the apex produced and acute ..... Ceramica, p. 446.
a^{10}. Fore wing with the apex truncate. Cerapteryx, p. 462.
c^7. Abdomen without dorsal crests.
a^8. Palpi with the 3rd joint long ..... Zosteropoda, p. 588.
b^8. Palpi with the 3rd joint short.
a^9. Fore wing with the apex not produced, the termen rounded..... Eriopygodes, p. 353.
b^9. Fore wing with the apex produced and acute, the termen obliquely curved ..... Leucania, p. 590.

Genus **THYRESTRA**, nov.

Type, *T. hyalophora*.

Proboscis fully developed; palpi upturned, fringed with hair in front, the 3rd joint porrect; frons smooth; eyes large, round, overhung by long cilia; antennæ of male almost simple; head and thorax clothed with rough scales, the prothorax with ridge-like dorsal crest, the metathorax with crest; abdomen with dorsal series of crests, paired lateral tufts of very long white hair protrusible from the lateral stigmata of male. Fore wing rather long and narrow, the apex produced and the termen oblique; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only; male with a patch of hyaline membrane in, below, and beyond cell.

1127. Thyrestra hyalophora.

Euplexia hyalophora, Hmpsn. J. Bomb. N. H. Soc. xi. p. 442 (1897).

♂. Head and thorax olive-green mixed with rufous and dark

brown; palpi blackish at sides; abdomen rufous, the crests and anal tuft green, the ventral surface whitish irrorated with black. Fore wing olive-green, the area just before the antemedial line and the medial area suffused with brown; the subbasal line represented by double black striæ from costa and cell; antemedial line double, filled in with green, oblique from costa to vein 1, then incurved; claviform very indistinctly defined by black; orbicular and reniform green, defined by white at sides, oblique oblong and almost forming a V-shaped mark; postmedial line double, filled in with green, strongly bent outwards below costa, straight to vein 4, then

Fig. 2.—*Thyrestra hyalophora*, ♂. ½.

oblique and bent outwards to inner margin, some violaceous beyond it except towards costa and inner margin, followed by some brown and slight black streaks on the veins and some pale points on costa; subterminal line pale, angled outwards at vein 7, dentate at veins 4, 3, and bent outwards to tornus, the area beyond it suffused with brown; a terminal series of small black lunules; cilia brown intersected with whitish. Hind wing brown, with a large hyaline patch in, below, and beyond lower part of cell; cilia pale, with a brown line through them; the underside whitish irrorated with brown; a black spot at upper angle of cell, a sinuous postmedial line obsolete at middle, and some terminal lunules.

Hab. Assam, Khásis, 1 ♂ type. *Exp.* 32 millim.

Genus ERANA.

Type.

Erana, Wlk. xi. 605 (1857) ..... *graminosa*.

Proboscis fully developed; palpi obliquely upturned and fringed with hair; frons smooth; eyes large, rounded; antennæ of male almost simple; head and thorax clothed with rough scales, pro- and metathorax with spreading crests; tibiæ fringed with hair; abdomen with dorsal crests on proximal segments and lateral fringes of hair, the claspers of male large. Fore wing narrow, the termen obliquely rounded; veins 3 and 5 from near angle of cell, vein 5 slender; the upper discocellular absent; 6 from upper angle of cell; 7, 8, 9 stalked; 10, 11 from cell; male with a fringe of very long hair below basal half of costa on underside. Hind wing of male very broad, the costal area greatly expanded and lobed; veins 3, 4 from angle of cell; the discocellulars and vein 5 almost obsolete; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

1128. Erana graminosa.

Erana graminosa, Wlk. xi. 605 (1857).
Erana vigens, Wlk. xxxiii. 743 (1865).

♂. Head and thorax golden green; tegulæ with rather darker medial line; tibiæ and tarsi with dark bands; abdomen ochreous, dorsally tinged with fuscous, the crests reddish. Fore wing golden sap-green sparsely irrorated with black; subbasal line represented by double black striæ from costa and cell, the antemedial line by double black striæ from costa and from submedian fold to inner margin; claviform and orbicular absent: traces of a waved medial line; reniform pale greenish, slightly defined by black and with brown spot on its lower part; postmedial line double, bent outwards below costa, excurved to vein 4, then strongly angled

Fig. 3.—*Erana graminosa*, ♂. ½.

inwards in submedian fold and excurved again, some pale points beyond it on costa; subterminal line diffused, pale, oblique from costa to vein 7, excurved at middle and angled inwards in submedian fold; a terminal series of pale and dark striæ. Hind wing red suffused with fuscous brown, leaving the termen green from costa to vein 2; a terminal series of brown striæ; the underside with the basal half pale, an indistinct curved postmedial line.

♀. Hind wing with less green on termen.

Hab. New Zealand (*J. J. Walker*), 1 ♂, Otago (*Hutton*), 1 ♂, Dunedin (*Purdie*), 1 ♂, Wellington (*Churton, Oxley*), 2 ♂, type and type *vigens*. *Exp.* 34 millim.

Larva. Hudson, New Zealand Moths and Butterflies, p. 28, pl. 3. f. 8.

Bright green, darker in front; dorsal, subdorsal, and lateral white lines; eight series of shining black warts, each with several stout black bristles; head yellowish brown, with some black dots. After the last moult it is pale green marbled with dark green, often with white lateral line and indistinct series of oblique green stripes; often pinkish brown, with two or three rows of pale spots. Food-plant, *Melicytus ramiflorus*. 4–10.

Genus TRICHESTRA, nov.

Type, *T. arbuticolens*.

Proboscis fully developed; palpi upturned, the 2nd joint fringed with hair in front, the 3rd moderate; frons smooth; eyes large, overhung by cilia; antennæ ciliated; head and thorax clothed with hair and scales, the pro- and

metathorax with spreading crests; tibiæ fringed with hair; abdomen with dorsal crests. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle or shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with black spot in discal fold beyond subterminal line ..... *nigropuncta.*
B. Fore wing without black spot beyond subterminal line.
  a. Fore wing with the antemedial line excurved from cell to inner margin ..... *arbuticolens.*
  b. Fore wing with the antemedial line oblique, waved throughout ..... *anthophila.*

1129. Trichestra nigropuncta.

Celæna nigropuncta, Druce, Biol. Centr.-Am., Het. ii. p. 479, pl. 93 f. 25 (1898).

♂. Head and thorax pale purplish red-brown irrorated with black; sides of palpi and frons black; antennæ blackish; patagia olive-green on outer edge; legs banded with black; (abdomen wanting). Fore wing rufous; the basal area olive-green, the base itself suffused with black; subbasal line ill-defined, double, black filled in with white, waved from costa to submedian fold; antemedial line indistinct, double, waved; claviform and orbicular absent; reniform a rather irregular white bar defined by black; a black medial line, oblique from costa to lower angle of cell, then sinuous; postmedial line double, the two parts widely separated, dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line white, angled outwards at vein 7, then incurved, and with a very prominent black lunule on its outer edge, then excurved, approximated to termen, somewhat dentate and defining the slight black terminal lunules; cilia olive-green, mostly black at tips. Hind wing fuscous brown; the cilia ochreous with a dark line through them; the underside pale red-brown irrorated with dark brown, a slight discoidal spot and sinuous postmedial line.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 26 millim.

1130. Trichestra arbuticolens. (Plate LXXVIII. fig. 23.)

Celæna arbuticolens, Butl. Trans. Ent. Soc. 1882, p. 121.

♀. Head and thorax red-brown mixed with black; tarsi with pale rings; abdomen grey with fuscous irroration. Fore wing red-brown with some dark irroration; the cell suffused with purple-brown; the veins with dark streaks and some white irroration; subbasal line represented by double black striæ from costa and median nervure with an oblique ochreous striga across the cell just beyond it; antemedial line double, bent inwards in cell, then

excurved; claviform small, obscurely defined by black; orbicular and reniform small, the former round with ochreous annulus, the latter narrow with white annulus or sometimes obscured by fuscous suffusion; traces of an oblique waved line from lower angle of cell to inner margin; postmedial line double, the outer line indistinct, with black and white points at the veins, bent outwards below costa, slightly incurved at discal fold, oblique and somewhat sinuous below vein 4, some pale points beyond it on costa; subterminal line pale, with traces of dentate dark marks on its inner side, irregularly dentate, angled outwards at vein 7 and excurved at middle; a terminal series of black points and a series of pale rufous points at base of cilia. Hind wing fuscous brown; the cilia pale, with a fuscous line through them; the underside pale, tinged with rufous and irrorated with fuscous, a small discoidal spot and curved postmedial line.

Hab. Chili (*Edmonds*), 3 ♀ type. *Exp.* 26 millim.

1131. Trichestra anthophila.

Celæna anthophila, Butl. Trans. Ent. Soc. 1882, p. 122.

♀. Brownish grey; palpi blackish at sides; some black scales near tips of tegulæ and upper edge of patagia; tarsi banded with black. Fore wing irrorated and partly suffused with fuscous; a waved subbasal line from costa to submedian fold; an indistinct

Fig. 4.—*Trichestra anthophila*, ♀. ½.

double waved antemedial line; claviform with its extremity slightly defined by black; orbicular and reniform small, very incompletely defined by black and open above and below; postmedial line rather ill-defined, black, minutely dentate, bent outwards below costa, strongly incurved below vein 4, some pale points on costa beyond it; subterminal line represented by a series of small white and black dentate marks, slightly excurved at vein 7 and middle; a terminal series of small black lunules. Hind wing fuscous brown, the cilia ochreous white with a dark line through them; the underside greyish irrorated with fuscous, a black discoidal spot and diffused curved postmedial line.

Hab. Chili (*Edmonds*), 1 ♀ type. *Exp.* 24 millim.

Genus BARATHRA.

	Type.
Barathra, Hübn. Verz. p. 218 (1827)	*brassicæ*.
Copimamestra, Grote, A. M. N. H. (5) xi. p. 54 (1883)	*brassicæ*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint fringed with hair, the 3rd short; frons smooth; eyes large, round, not ciliated; antennæ of male minutely ciliated; tibiæ fringed with hair, the fore tibia with long curved claw on outer side; head and thorax clothed with hair and scales, the pro- and metathorax with spreading crests; abdomen with dorsal series of crests, the one on basal segment large. Fore wing with the termen crenulate; veins 3, 5 from close to angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base.

A. Fore wing with the subterminal line prominently defined by whitish on inner side ..... *configurata*.
B. Fore wing with the subterminal line not defined by whitish on inner side.
  a. Fore wing with the orbicular indistinct and ill-defined ... *curialis*.
  b. Fore wing with the orbicular distinctly defined by black... *brassicæ*.

1132. Barathra configurata.

Mamestra configurata, Wlk. ix. 234 (1856); Druce, Biol. Centr.-Am., Het. i. p. 272, pl. 26. f. 20.
Copimamestra occidenta, Grote, A. M. N. H. (5) xi. p. 54 (1883); Smith, Cat. Noct. N. Am. p. 113.

Head and thorax dark brown mixed with grey; tarsi with whitish rings; abdomen grey-brown, the dorsal crests darker. Fore wing grey-brown irrorated with fuscous, the inner area and the area just before subterminal line pale olive-brown; a small white-tipped dark fan of scales at base; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, nearly erect; claviform rather small, defined by black; orbicular and reniform large, defined by black, the former irregularly rounded, with brown centre and pale annulus, the latter with brownish centre and white-spotted annulus; postmedial line indistinct, double, minutely dentate, bent outwards below costa, slightly incurved at discal fold and strongly below vein 4, some white points beyond it on costa; subterminal line strong, white, angled outwards at vein 7 and dentate at veins 4, 3, some black striæ before it on the olive band, especially between veins 3 and 1, the area beyond it with blackish streaks in the interspaces; a terminal series of black lunules; cilia blackish, with white line at base and intersected with white. Hind wing whitish, the veins and terminal area fuscous brown; a dark terminal line; cilia whitish, with brown line near base; the underside with the costal and terminal areas irrorated with brown, a dark discoidal spot.

Hab. U.S.A., Colorado, Denver, 1 ♀, Durango (*Oslar*), 1 ♂, 3 ♀, New Mexico; Mexico (*Doubleday*), 1 ♂ type, Mexico City (*Hoge*), 1 ♀, Godman-Salvin Coll. *Exp.* 40–44 millim.

1133. Barathra curialis. (Plate XC. fig. 1.)

Copimamestra curialis, Smith, Proc. U.S. Nat. Mus. x. p. 470 (1887); Smith, Cat. Noct. N. Am. p. 113.

♀. Dark fuscous. Fore wing with the basal and postmedial areas tinged with reddish, also the discal fold in medial area; the antemedial inner area with a faint greenish tinge; subbasal line double, indistinct, interrupted; antemedial line erect, hardly traceable; claviform defined by black; orbicular almost obsolete, very faintly defined; reniform moderate, white, with irregular dark central lunule and black outline; postmedial line single, black, strongly dentate, bent outwards below costa and incurved below vein 4; postmedial area paler than ground-colour, with dark striation and irroration, darker towards costa; subterminal line whitish, angled outwards at vein 7 and dentate at veins 4, 3; terminal area with pale irroration, a terminal series of small black lunules. Hind wing fuscous, darker towards termen; the underside grey with darker irroration, a discoidal spot and postmedial line.

Hab. CANADA, Orilla (*Bush*), 1 ♀; U.S.A., Maine, Kittery Point, New Hampshire, Franconia. *Exp.* 43 millim.

1134. Barathra brassicæ.

Noctua brassicæ, Linn. Syst. Nat. i. p. 516 (1758); Hübn. Eur. Schmett., Noct. f. 88; Dup. Lép. Fr. vii. p. 37, pl. 102. f. 5; Steph. Ill. Brit. Ent., Haust. ii. p. 194; Staud. Cat. Lep. pal. p. 156.
Noctua albidilinea, Haw. Lep. Brit. p. 191 (1809); Steph. Ill. Brit. Ent., Haust. ii. p. 195.
Mamestra andalusica, Staud. Cat. p. 90 (1871).
Mamestra decolorata, Staud. Stett. ent. Zeit. 1889, p. 34.
Mamestra scotochroma, Röber, Iris, i. p. 340, pl. 12. f. 13 (1884).
Mamestra straminea, Failla, Nat. Sic. x. p. 30, pl. 1. f. 5 (1890).

Head and thorax dark brown mixed with grey; tarsi black with whitish rings; abdomen grey-brown, with the dorsal crests darker.

Fig. 5.—*Barathra brassicæ*, ♂. ½.

Fore wing dark brown irrorated with grey, a rufous tinge in discal and submedian folds and above inner margin before antemedial line; a small dark white-tipped fan of scales at base; the subbasal line double, waved, from costa to submedian fold; the

antemedial line double, waved, nearly erect; claviform defined by black, short; orbicular and reniform large, defined by black, the former round, the latter with white spots on its inner and outer sides, or wholly filled in with whitish; a waved medial shade angled outwards on median nervure; postmedial line dentate and produced to points on the veins, double towards costa, bent outwards below costa, slightly incurved at discal fold and strongly below vein 4, some white points beyond it on costa; subterminal line white, dentate outwards at veins 7, 4, 3, the area beyond it rather darker; a terminal series of small black lunules; cilia intersected with whitish. Hind wing brown, paler towards base; a slight whitish mark on vein 2 near termen; cilia white, with brown line through them; the underside ochreous white, the costal and terminal areas irrorated with brown, a discoidal lunule and waved postmedial line.

Ab. 1. *scotochroma*. Melanic.

Ab. 2. *andalusica*. Paler, the fore wing yellowish grey and without rufous tinge.—S. Europe.

Ab. 3. *decolorata*. Much paler, fore wing whitish grey.—W. Turkestan.

Hab. Britain, Leech Coll.; France, Leech Coll.; Germany, Zeller and Leech Colls.; Switzerland, Frey Coll.; Spain; Italy; Sicily; Norway, Zeller Coll.; Russia; Armenia; Asia Minor, Bithynia, Pontus; Persia; W. Turkestan, Fergana, Issyk-kul; Siberia; Amurland, Blagoveschensk, 6 ♂, Ussuri; Japan, Hakodate, 1 ♂, Yokohama (*Jonas*, *Pryer*), 6 ♂, 1 ♀, Tokio (*Maries*), 1 ♂, 1 ♀; W. China, Chia-kou-ho (*Pratt*), 1 ♂, Wa-ssu-kou, 1 ♂, Pu-tsu-fang, 1 ♂; Kashmir, Narkundah (*McArthur*), 2 ♂, Nubra (*McArthur*), 1 ♂, Scind Valley (*Leech*), 1 ♀, Goorais Valley (*Leech*), 1 ♂; Punjab, Kulu, Sultanpur (*G. Young*), 2 ♂, Thundiani (*Yerbury*), 1 ♂, 2 ♀, Simla (*Swinhoe*), 1 ♂, Dalhousie, 1 ♀, Dharmsála (*Hocking*), 2 ♂, 1 ♀; Tibet, Yatung (*Hobson*), 1 ♀. *Exp.* 40–52 millim.

Larva. Meyr. Brit. Lep. p. 86; Barrett, Lep. Brit. iv. p. 210, pl. 160. f. 2.

Brown to dull green, sometimes marked with blackish; dorsal line dark; spiracular line yellowish; somite 11 dorsally humped; head yellowish brown with dark markings. Food-plants: *Brassica*, *Rumex*, *Chenopodium*, etc. 6–9.

Genus **TRICHORHIZA**, nov.

Type, *T. petersoni*.

Proboscis fully developed; palpi upturned, the 2nd joint fringed with hair in front; frons with rounded prominence excised below, above the corneous plate; antennæ of male ciliated; head and thorax clothed chiefly with scales, the prothorax with divided crest; abdomen with dorsal series of crests. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

1135. Trichorhiza peterseni.

Rhizogramma peterseni, Christ. Rom. Mém. iii. p. 76, pl. iv. f. 3 (1887); Staud. Cat. Lep. pal. p. 183.

♂. Head and thorax grey mixed with brown; tegulæ brown at tips; abdomen grey irrorated with brown. Fore wing grey irrorated with reddish brown; subbasal line represented by brown striæ from costa and median nervure; a black streak with slight brown suffusion below it below the cell from base to the antemedial line, which is indistinct and angled outwards in submedian fold and above inner margin; claviform defined by a slight brown line above; orbicular and reniform small, defined by brown, the former oblique elliptical; postmedial line unusually near termen, very minutely waved, double, slightly bent outwards below costa,

Fig. 6.—*Trichorhiza peterseni*, ♂. ½.

oblique to vein 5, then inwardly oblique; subterminal line angled outwards at vein 7, retracted to postmedial line at vein 5, dentate to termen at veins 4, 3, then retracted to postmedial line at submedian fold, the area beyond it brown except at apex and inner margin; a lunulate terminal black line; cilia intersected with whitish. Hind wing white, the veins and terminal area tinged with brown; the underside with the costal and terminal areas slightly irrorated with brown, a postmedial series of points on the veins.

Hab. W. Turkestan, Turcomania, 1 ♂, Issyk-kul; W. Siberia, Altai, 1 ♂; E. Turkestan, Kuldja, 1 ♂. *Exp.* 38 millim.

Genus **DISCESTRA**, nov.

Type, *D. chartaria*.

Proboscis fully developed; palpi upturned, the 2nd joint fringed with hair in front; frons with semilunate corneous prominence with raised edges; a corneous plate below frons; eyes large, rounded; antennæ of male ciliated; head and thorax clothed chiefly with scales, the pro- and metathorax with divided crests; abdomen with dorsal series of crests. Fore wing with veins 3, 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the ground-colour whitish; the claviform large, filled in with brown.
  a. Fore wing white, slightly tinged with yellowish ..... *florida*.
  b. Fore wing whitish, distinctly tinged with brown..... *chartaria*.
B. Fore wing tinged with ochreous; the claviform small, not filled in with brown.
  a. Fore wing with the reniform defined by black below .... *eremistis*.
  b. Fore wing with the reniform not defined by black below ... *arenaria*.

*1136. Discestra florida. (Plate LXXXVI. fig. 1.)

Mamestra florida, Smith, Pr. U.S. Nat. Mus. xxii. p. 465 (1900); Dyar, Cat. Lep. N. Am. p. 156.

♂. Head, thorax, and abdomen white, slightly irrorated with yellowish and fuscous scales. Fore wing white, slightly irrorated with yellowish and fuscous scales; subbasal line represented by double black striæ from costa to median nervure; antemedial line double, black, angled outwards in submedian fold and excurved below vein 1; claviform moderate, filled in with black; orbicular a very small black annulus; reniform filled in with black, ill-defined; median shade oblique from costa to lower angle of cell, then less distinct; postmedial line double, the inner dentate, the outer even, excurved from costa to vein 4, then incurved; subterminal line white, defined by fuscous on inner side and with blackish patches before it at costa and discal fold, slightly angled outwards at vein 7 and excurved at middle; a terminal series of blackish lunules. Hind wing white, a punctiform postmedial line, diffused subterminal band, and terminal line fuscous.

Hab. U.S.A., Florida, Biscayne Bay. *Exp.* 32 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

1137. Discestra chartaria.

Mamestra chartaria, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 138, pl. iv. f. 12 (1873); Smith, Cat. Noct. N. Am. p. 122.

♂. Head and thorax white mixed with brown; tegulæ with black medial line; patagia with black line near upper edge; tarsi

Fig. 7.—*Discestra chartaria*, ♂. ½.

with black bands; abdomen ochreous white, dorsally suffused with brown. Fore wing white, more or less strongly irrorated and suffused with pale reddish brown and fuscous; subbasal line double, waved, from costa to vein 1; antemedial line double, waved,

oblique; claviform well developed, brown defined by black; orbicular and reniform defined by black, the former elongate elliptical, incompletely defined, the latter with its lower part or almost entirely filled in with black; a curved, waved, medial line; postmedial line dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved; subterminal line white, defined by dark marks on inner side, dentate, angled outwards at vein 7, excurved at middle and to tornus, a dark patch beyond it in discal fold; a terminal series of black lunules; cilia chequered ochreous and fuscous. Hind wing white; the veins and terminal area suffused with fuscous brown; a terminal series of dark lunules; the underside with the costal and terminal areas slightly irrorated with brown, a discoidal point and postmedial series of striæ on the veins showing through to upperside.

Hab. U.S.A., Washington, Colorado, California, 2 ♂ type. *Exp.* 38 millim.

1138. **Discestra eremistis.** (Plate LXXVIII. fig. 24.)

Mamestra eremistis, Püng. Soc. Ent. xix. p. 130 (1904).

♂. Grey-white tinged with brown and mixed with fuscous; patagia with a few black scales near upper edge; tarsi banded with black; abdomen whitish irrorated with fuscous. Fore wing whitish, tinged with reddish brown and slightly irrorated with black; subbasal line represented by double black striæ from costa and cell; antemedial line with double black striæ at costa, then indistinct, waved, angled inwards on vein 1; hardly a trace of a minute claviform; orbicular and reniform large, whitish, very ill-defined, the former round, the latter prominently defined by black below; medial line represented by a dark striga from costa, then indistinct, oblique; postmedial line with double black striæ at costa, bent outwards below costa, dentate, excurved to vein 4, then incurved; subterminal line indistinct, pale, defined on inner side by minute dentate fuscous marks, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing white tinged with fuscous, especially on the veins and terminal area; an indistinct sinuous postmedial line; cilia white; the underside white slightly irrorated with black, a discoidal lunule and some small lunules on termen.

Ab. 1. Whiter and less tinged with brown.—Ili.

Hab. W. Turkestan, Merv, type † in Coll. Püngeler, Transcaspia, 1 ♂; E. Turkestan, Ili. *Exp.* 32-38 millim.

1139. **Discestra arenaria**, n. sp. (Plate LXXVIII. fig. 25.)

Head whitish; thorax and abdomen whitish tinged with pale ochreous brown; tarsi ringed with fuscous. Fore wing whitish, tinged with pale ochreous brown and irrorated with fuscous; subbasal line double, waved, from costa to vein 1; antemedial line indistinct, double, waved; claviform moderate, defined by black;

orbicular and reniform moderate, with fuscous centres defined by black, the former round; traces of a medial line; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line pale, slightly defined by fuscous, minutely waved, angled outwards at vein 7, slightly dentate on veins 4, 3, and bent outwards to tornus; a terminal series of small black lunules. Hind wing white, the veins and termen tinged with brown; some dark terminal points; the underside with the costal area slightly irrorated with brown, a small black discoidal spot.

Hab. Sind, Karáchi (*Swinhoe*), 2 ♂, 1 ♀, type. *Exp.* 30–32 millim.

Genus **CRATERESTRA**, nov.

Type, *C. lucina*.

Proboscis fully developed; palpi upturned, the 2nd joint fringed with hair in front, the 3rd moderate, oblique; frons with truncate, conical, corneous prominence with corneous plate below it; eyes large, rounded; antennæ ciliated; head and thorax clothed with scales and hair, the pro- and meta-thorax with spreading crests; tibiæ fringed with rather long hair; abdomen with dorsal series of crests and lateral fringes of hair. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the medial area darker than the ground-colour.
  a. Fore wing with the pale postmedial area extending to inner side of the postmedial line and obscuring the reniform . *lucina*.
  b. Fore wing with the pale postmedial area not extending to inner side of the postmedial line.
    a^1. Fore wing with whitish annuli to the stigmata.
      a^2. Fore wing with subterminal series of white points... *niveopicta*.
      b^2. Fore wing without subterminal series of white points ..... *terranea*.
    b^1. Fore wing without whitish annuli to stigmata ..... *media*.
B. Fore wing with the medial area not darker than the ground-colour.
  a. Fore wing with the orbicular oblique; veins 4, 3 defined by dentate whitish marks extending to near termen.
    a^1. Fore wing with the ground-colour brownish ..... *hoplites*.
    b^1. Fore wing with the ground-colour whitish ..... *yacima*.
  b. Fore wing with the orbicular round; veins 4, 3 not defined by dentate white marks.
    a^1. Fore wing with the orbicular indistinct.
      a^2. Fore wing with the costal area whitish.
        a^3. Fore wing with the inner area whitish ..... *bifascia*.
        b^3. Fore wing with the inner area not whitish ..... *albicosta*.
      b^2. Fore wing with the costal area not whitish ..... *subterminata*.
    b^1. Fore wing with the orbicular well-defined.
      a^2. Fore wing without rufous streaks in discal and submedian folds.
        a^3. Fore wing with the inner and postmedial areas pale brown ..... *semifusca*.
        b^3. Fore wing with the inner and postmedial areas concolorous ..... *subvelata*.
      b^2. Fore wing with rufous streaks in discal and submedian folds ..... *definitans*.

1140. Craterestra lucina.

Stibæra lucina, Druce, Biol. Centr.-Am., Het. i. p. 296, pl. 27. f. 27 (1889).

Head and thorax red-brown mixed with whitish; tarsi banded with black; abdomen red-brown, dorsally suffused with black. Fore wing pale grey-brown suffused in parts with purplish brown, the area between the antemedial and medial lines strongly suffused; a double, waved subbasal line from costa to submedian fold; a double antemedial line angled outwards below costa, then strongly excurved; claviform defined by black, very short and broad; orbicular and reniform with pale brownish centres and grey annuli, the former defined by black, rather pointed above and dilated below, the latter very indistinct; a waved medial line; postmedial line indistinct, double, minutely dentate, bent outwards below

Fig. 8.—*Craterestra lucina*, ♂. ½.

costa and strongly incurved below vein 4, some pale points on costa beyond it; subterminal line pale, defined on inner side by a series of slight dark marks, and with some fuscous suffusion beyond it; a terminal series of small black lunules. Hind wing fuscous brown; the underside ochreous whitish irrorated with dark brown, the basal area suffused with fuscous except towards costa, a black discoidal lunule, a diffused fuscous subterminal band.

Hab. Mexico, Tabasco, Jalapa (*Trujillo*), 1 ♀, Teapa (*H. H. Smith*), 1 ♂, type, Godman-Salvin Coll. *Exp.*, ♂ 36, ♀ 40 millim.

1141. Craterestra niveopicta. (Plate LXXVIII. fig. 26.)

Perigea niveopicta, Butl. Trans. Ent. Soc. 1882, p. 124, ♀.
Perigea florinda, Butl. Trans. Ent. Soc. 1882, p. 125, ♂.

Head and thorax purplish brown mixed with some black, some of the scales tipped with grey; tarsi black with whitish rings; abdomen brown, whitish at base. Fore wing brown irrorated with black and grey, and with a purplish gloss; subbasal line double, waved, from costa to vein 1, but interrupted in cell; antemedial line double, irregularly waved, oblique; claviform short and broad, defined by black; orbicular and reniform with brown centres and white annuli defined by black, the former round, the latter open above and below and with some blackish streaks from it to postmedial line; traces of a waved medial line; postmedial line defined

by grey on outer side, dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line represented by a series of minute black streaks with white points on them; a terminal series of small black lunules. Hind wing white, the veins and terminal area broadly suffused with brown, in female wholly suffused with brown; cilia white with a brown line at base; the underside with the costal and terminal areas irrorated with brown, in female uniformly irrorated, a black discoidal lunule and minutely waved postmedial line.

Hab. Chili (*Edmonds*), 1 ♂, 2 ♀, type and type *florinda*. *Exp.* 32–36 millim.

1142. Craterestra terranea. (Plate LXXVIII. fig. 27.)

Perigea terranea, Butl. Trans. Ent. Soc. 1882, p. 123.

♂. Head and thorax pale reddish brown mixed with black, some of the scales tipped with grey; palpi blackish at sides; tarsi black with pale rings; abdomen pale brown. Fore wing reddish brown irrorated with black; subbasal line double, waved, from costa to vein 1, but interrupted at cell; a double, waved, oblique antemedial line; claviform short and broad, defined by black; orbicular and reniform defined by black, the former round, the latter open above and below and with slight dark streaks from it to postmedial line; traces of a waved medial line; postmedial line arising from double black striæ on costa, bent outwards below costa, then minutely dentate and defined by grey on outer side, excurved to vein 4, then incurved; some pale points beyond it on costa; subterminal line represented by a series of small ochreous and black dentate marks, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing whitish; the veins and terminal areas suffused with brown with a yellowish gloss; cilia whitish, with a brown line at base; the underside with the costal and terminal areas irrorated with brown, a discoidal point and postmedial line on costal half.

Hab. Chili (*Edmonds*), 1 ♂ type. *Exp.* 34 millim.

1143. Craterestra media. (Plate LXXVIII. fig. 28.)

Hadena media, Wlk. xi. 756 (1857); Hmpsn. Moths Ind. ii. p. 199.
Apamea latifasciata, Moore, P. Z. S. 1881, p. 345.
Apamea viriata, Swinh. P. Z. S. 1885, p. 450.

Head and thorax red-brown mixed with black or fuscous brown; tegulæ with medial black line; tarsi with ochreous rings; abdomen ochreous brown. Fore wing fuscous brown, the area below the cell before the antemedial line and the postmedial area except towards costa ochreous more or less tinged with brown; a waved subbasal line from costa to submedian fold; antemedial line defined by ochreous on inner side, waved, strongly angled outwards above inner margin; claviform moderate, defined by black and with some

blackish between it and postmedial line: orbicular and reniform defined by black, the former round; an indistinct waved medial line; postmedial line dentate, indistinctly double, bent outwards below costa, excurved to vein 4, then oblique; subterminal line pale, defined on inner side by a series of slight dentate rufous marks, angled outwards at vein 7 and dentate at veins 4, 3, the area beyond it dark except at apex; a terminal series of black points; cilia intersected with rufous. Hind wing white or ochreous white, the veins and terminal area more or less tinged with fuscous; the underside with the costal and terminal areas irrorated with fuscous, a postmedial series of slight dark streaks on the veins.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂; Punjab, Kulu, Sultanpore (*G. Young*), 2 ♂, 2 ♀, Dharmsála (*Hocking*), 1 ♀, Jubbulpore, 2 ♀, Manpuri, 1 ♀, type *latifasciata*; Bombay, Poona (*Swinhoe*), 1 ♀, type *viriata*; Canara (*Ward*), 1 ♂ type; Nilgiris (*Hampson*), 4 ♂; Burma, Mandalay (*Bingham*), 1 ♀, Thayetmyo, (*Watson*), 1 ♀. *Exp.* 34–36 millim.

1144. **Craterestra hoplites.** (Plate LXXVIII. fig. 29.)

Mamestra hoplites, Staud. Cat. Lep. pal. p. 160 (1901).

Head and thorax grey mixed with reddish brown and black; frons with black bar; tegulæ and patagia edged with black, the former with medial black line; tarsi with pale rings; abdomen grey-brown. Fore wing greyish, almost entirely suffused with pale red-brown; subbasal line represented by oblique black striæ from costa and cell, interrupting a black streak below base of cell; an oblique black streak from inner margin before the antemedial line, which is double, very strongly angled inwards on median nervure and vein 1, and outwards in submedian fold and above inner margin; claviform defined by black, very large, and extending to postmedial line; orbicular and reniform with brown centres and white annuli defined by black, the former oblique elliptical, open above; the terminal halves of median nervure and vein 1 above and vein 3 on both sides defined by white streaks; postmedial line double, somewhat dentate, bent outwards below costa, incurved at discal fold to the reniform, incurved below vein 4, some whitish points beyond it on costa; the veins of terminal area streaked with black; subterminal line represented by some whitish streaks on each side of veins towards costa, dentate to termen on veins 4, 3, and defined on inner side by dentate black marks below costa and middle; cilia brown, intersected with white. Hind wing pale suffused with brown, the terminal half fuscous brown with a pale mark above tornus; the underside brownish white, a discoidal point and waved postmedial line.

Hab. Russia, Urals; W. Turkestan, Turcomania, Tekké, 1 ♂, 1 ♀. *Exp.* 34 millim.

1145. Craterestra yacima. (Plate LXXVIII. fig. 30.)

Mamestra yakima, Smith, Proc. U.S. Nat. Mus. xxii. p. 464 (1900); Dyar, Cat. Lep. N. Am. p. 156.

♂. Head and thorax grey-white mixed with fuscous brown and black; antennæ ringed with white; tegulæ with ill-defined black line near upper edge; patagia with black scales near upper edge; tarsi ringed with white; abdomen whitish mixed with reddish brown and black. Fore wing grey-white thickly irrorated with fuscous; an ill-defined black streak below base of cell; subbasal and antemedial lines represented by double black striæ from costa; claviform well-developed, defined by black; orbicular and reniform indistinctly defined by black, the former somewhat oblique elliptical, the latter with its lower part filled in with fuscous; postmedial line very indistinct, with slight black streaks on the veins beyond it, bent outwards below costa and incurved below vein 5, some white points on costa beyond it; subterminal line very indistinct, whitish defined by obscure dentate dark marks on inner side and the area beyond it darker, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules; cilia chequered white and fuscous. Hind wing pure white, the terminal area suffused with fuscous from apex to vein 2; the underside with terminal series of black lunules.

Hab. U.S.A., Washington, Utah, 1 ♂. *Exp.* 34 millim.

1146. Craterestra bifascia.

Axylia bifascia, Hmpsn. Ill. Het. B. M. ix. p. 91, pl. 161. f. 6 (1893); id. Moths Ind. ii. p. 281.

♂. Head and thorax fuscous, sometimes with some ochreous on vertex of head and metathorax; abdomen ochreous, ventrally fuscous except at extremity. Fore wing ochreous tinged with rufous, and slightly irrorated with brown; a fuscous fascia extending from discal to submedian fold and from base to termen, towards which it expands to below apex; the veins whitish except on the dark area; a small black discoidal spot and white point at lower angle of cell; the antemedial line represented by a striga at inner margin; a minutely waved postmedial line excurved from costa to lower angle of cell, then oblique; a terminal series of black points. Hind wing ochreous brown tinged with fuscous; the underside paler, irrorated with brown on costal and terminal areas, a discoidal lunule, curved postmedial line, and terminal series of black points.

Hab. Ceylon, Pundaloya (*Green*), 3 ♂, type. *Exp.* 32 millim.

1147. Craterestra albicosta.

Axylia albicosta, Hmpsn. Ill. Het. B. M. viii. p. 70, pl. 144. f. 20 (1891).
Leucania proleuca, Hmpsn. Moths Ind. ii. p. 281 (1894).

Head and thorax fuscous, sometimes with some ochreous on vertex of head and base of tegulæ; abdomen ochreous, ventrally

tinged with fuscous. Fore wing suffused with fuscous; the costal area ochreous whitish to middle of cell, narrowing towards apex; orbicular and reniform represented by small ill-defined black spots; a white point at lower angle of cell; postmedial line represented by a series of black points excurved from costa to vein 4, then oblique; a terminal series of black points. Hind wing ochreous whitish suffused with fuscous except at base, the underside with discoidal point and indistinct curved postmedial line.

Hab. Madras, Nilgiris (*Hampson*), 2 ♂, 4 ♀, type; Travancore, Pirmád (*Fergusson*), 1 ♂. *Exp.* 32–36 millim.

1148. **Craterestra subterminata**, n. sp. (Plate LXXVIII. fig. 31.)

♀. Head and thorax brownish grey; tegulæ with black medial line; tarsi fuscous with pale rings; abdomen grey-brown. Fore wing grey tinged with reddish brown; the postmedial area except towards costa, the area below the cell from before middle, and the inner margin from base suffused with fuscous; an ill-defined black streak below base of cell; subbasal line represented by a blackish mark below costa; antemedial line indistinct, dentate, oblique; claviform absent; orbicular very indistinct, rather elongate; reniform with brown and fuscous centre and greyish annulus, somewhat angled inwards on median nervure; postmedial line indistinct, double filled in with greyish, bent outwards below costa, excurved to vein 4, then incurved, some pale points on costa beyond it; subterminal line pale, diffused, angled outward at vein 7 and excurved at middle; a terminal series of points; cilia whitish intersected with brown. Hind wing whitish tinged with brown; the veins and termen brown; the underside white irrorated with brown, a discoidal spot, indistinct sinuous postmedial line with dark stripe on the veins, and some terminal lunules.

Hab. Sikkim (*Dudgeon*), 1 ♀ type. *Exp.* 34 millim.

1149. **Craterestra semifusca**, n. sp. (Plate LXXXVI. fig. 2.)

♀. Head and thorax fuscous mixed with pale grey-brown; abdomen pale grey-brown slightly tinged with fuscous. Fore wing pale grey-brown, the costal area to subterminal line and the cell to postmedial line suffused and irrorated with fuscous, the terminal area fuscous except at apex; the veins irrorated with fuscous; antemedial line indistinct, angled outwards below costa and cell and inwards on median nervure and vein 1; orbicular and reniform moderate, with fuscous centres and pale brown annuli defined by fuscous, the former rather elongate rounded; postmedial line produced to short streaks on the veins, bent outwards below costa, incurved at discal fold and below vein 4; subterminal line slightly defined by rufous on inner side and by the fuscous suffusion beyond it except at apex, somewhat excurved at middle; a terminal series of small black lunules; a fine pale line at base of cilia. Hind wing white, the veins and terminal area tinged with brown; a dark

terminal line; the underside with the costal area irrorated with fuscous, a discoidal point, and postmedial series of slight striæ on the veins.

Hab. Uganda, Ketoma, 5000 feet (*Doggett*), 1 ♀ type. *Exp.* 32 millim.

1150. Craterestra subvelata. (Plate LXXVIII. fig. 32.)

Apamea subvelata, Wlk. Melliss' St. Helena, Ins. p. 184 (1875).

Head and thorax dark rufous brown mixed with some grey; tegulæ with blackish medial line; fore coxæ of male clothed with long ferruginous scales; tarsi with pale rings: abdomen greyish brown, the anal tuft more rufous. Fore wing dark reddish brown tinged with greyish fuscous; a waved black subbasal line from costa to vein 1 with a point beyond it on costa; a waved antemedial line; claviform small, defined by black; orbicular and reniform defined by black, the former round and with greyish annulus, in one specimen they are open and confluent above, sometimes with pale patches, between, beyond, and below them; an indistinct waved medial line; postmedial line dentate, bent outwards below costa, excurved to vein 4, then oblique, some ochreous points beyond it on costa; subterminal line indistinct, pale, waved, with fuscous dentate marks on inner side, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules. Hind wing dark reddish brown, rather paler towards base; cilia pure white. Underside whitish, the terminal area suffused with fuscous, the basal area suffused with ferruginous in male; fore wing with discoidal lunule; hind wing with discoidal spot and curved postmedial line.

Hab. St. Helena (*Wollaston*), 2 ♂, 1 ♀. *Exp.* 34–36 millim.

1151. Craterestra definiens. (Plate LXXIX. fig. 1.)

Heliothis definiens, Wlk. xi. 689 (1857).

Head and thorax rufous mixed with grey and some black scales; tegulæ with medial blackish line; abdomen ochreous. Fore wing grey thickly irrorated with fuscous; the discal and submedian folds and inner margin with rufous streaks; the subbasal line represented by double black striæ from costa and cell; the antemedial line double at costa, then waved; claviform small, defined by black; orbicular and reniform defined by black, the former round, sometimes filled in with whitish, the latter with its lower part filled in with fuscous; an indistinct, waved, medial shade; postmedial line dentate and produced to grey and black points on the veins, bent outwards below costa, excurved to vein 4, then oblique, some pale points on costa beyond it; subterminal line formed by a series of pale and rufous dentate marks, with slight dark dentate marks before them at middle, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules. Hind wing

pale ochreous, the terminal area suffused with fuscous; cilia whitish. Underside whitish with some brown irroration; both wings with discoidal spot, curved punctiform postmedial line, and diffused fuscous subterminal band.

Hab. Namaqualand, O'Okiep (*Lightfoot*), 1 ♂; Cape Colony (*Dr. Smith*), 1 ♀ type, Deelfontein (*Col. Sloggett*), 1 ♀, Rosmead, 1 ♂. *Exp.* 36–38 millim.

Genus **SCOTOGRAMMA**, nov.

Type.

Scotogramma, Smith, Pr. U.S. Nat. Mus. x. p. 469 (1887) ..... *submarina.*

Proboscis fully developed; palpi oblique, the 2nd joint fringed with hair in front, the 3rd moderate, porrect; frons with rounded prominence with slight vertical ridge and corneous plate below it; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair and scales, the pro- and metathorax with spreading crests; tibiæ fringed with hair; abdomen with dorsal series of crests and lateral fringes of hair. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

A. Fore wing with vein 2 defined by a dentate pale mark on medial area.
  a. Fore wing with the subterminal line dentate to termen on vein 6 ..... *armata.*
  b. Fore wing with the subterminal line not dentate at vein 6.
    a^1. Fore wing with the inner medial area pale above and below vein 1 ..... *dianthi.*
    b^1. Fore wing with the inner medial area concolorous ... *nana.*
B. Fore wing with veins 4, 3, 2 defined by pale streaks ..... *isoloma.*
C. Fore wing with vein 2 not defined by a dentate whitish mark on medial area, or pale streaks.
  a. Fore wing with black streak below cell.
    a^1. Fore wing with the claviform obsolete ..... *submedianata.*
    b^1. Fore wing with the claviform large, defined by black . *ptilodonta.*
  b. Fore wing without black streak below cell.
    a^1. Fore wing with distinct ≷-mark on subterminal line at veins 4, 3.
      a^2. Fore wing broad, triangular.
        a^3. Fore wing grey suffused in parts with brown or fuscous ..... *trifolii.*
        b^3. Fore wing grey almost wholly suffused with black ..... *impolita.*
      b^2. Fore wing narrow, elongate ..... *hadeniformis.*
    b^1. Fore wing without distinct ≷-mark on subterminal line.
      a^2. Fore wing with the postmedial line incurved below vein 4.
        a^3. Fore wing with the medial area whitish ..... *stigmosa.*
        b^3. Fore wing with the medial area not whitish.
          a^4. Fore wing with whitish patch beyond the claviform ..... *agrotiformis.*
          b^4. Fore wing without whitish patch beyond the claviform.
            a^5. Fore wing with the ground-colour grey-brown.

a^6. Tegulæ with dark medial line ..... *sodæ*.
b^6. Tegulæ without dark medial line ..... *defessa*.
b^5. Fore wing with the ground-colour grey.
a^6. Fore wing with the medial area fuscous ... *repentina*.
b^6. Fore wing with the medial area concolorous ..... *orida*.
c^5. Fore wing with the ground-colour ferruginous, the stigmata defined by white ..... *implexa*.
b^2. Fore wing with the postmedial line oblique below vein 4.
a^3. Fore wing with the lines defined by white ..... *peculiaris*.
b^3. Fore wing with the lines not defined by white.
a^4. Fore wing ochreous whitish ..... *submarina*.
c^4. Fore wing reddish brown ..... *mendosica*.

*1152. Scotogramma armata. (Plate LXXIX. fig. 2.)

Mamestra armata, Staud. Stett. ent. Zeit. 1888, p. 15; id. Cat. Lep. pal. p. 160.

♂. Head and thorax grey mixed with reddish brown; tegulæ with dark lines at middle and near tips; patagia with some black scales near upper edge; tarsi blackish with pale rings; abdomen reddish brown mixed with fuscous. Fore wing grey mostly suffused with brown, the medial and terminal areas with dark or reddish brown; the veins dark defined by whitish streaks, on base of vein 2 forming a dentate mark; subbasal line represented by double oblique black striæ from costa and cell; a slight black streak above inner margin before the antemedial line which is double, angled outwards below costa, inwardly oblique and slightly sinuous to vein 1, then angled outwards above inner margin; claviform elongate and acute at extremity, defined by black and with pale streak at middle; orbicular and reniform narrow with white annuli defined by black, the former oblique elliptical; postmedial line double, filled in with whitish, bent outwards below costa, angled outwards at vein 5, then incurved to vein 2; subterminal line white, defined on inner side by dentate black marks below costa and at middle, angled outwards to termen at veins 8, 7, 6, 4, 3, 2. Hind wing pale tinged with fuscous brown, especially on the veins and terminal area; the underside whitish, the costal and terminal areas irrorated with brown, the veins streaked with brown, a small discoidal spot and curved postmedial line.

Hab. W. Turkestan, Sarawschan, Issyk-kul; E. Turkestan, Kuldja, in Coll. Püngeler. *Exp.* 40 millim.

1153. Scotogramma dianthi.

Noctua dianthi, Tausch. Mém. Mosc. 1809, ii. p. 316, pl. 20. f. 2; Hübn. Eur. Schmett., Noct. f. 587; Godt. Lép. Fr. v. pl. 65. f. 6; Staud. Cat. Lep. pal. p. 160.
Hadena dentigera, Ev. Bull. Mosc. 1837, p. 35.
Hadena actinobola, Ev. Bull. Mosc. 1837, p. 38, & 1856, ii. p. 32, pl. 3. f. 6.

Head and thorax pale ochreous mixed with dark brown; tegulæ

with dark lines at middle and near tips; tarsi ringed with white; abdomen whitish tinged with fuscous. Fore wing pale ochreous mostly suffused with brown and tinged with purple; subbasal line represented by oblique double striæ from costa and cell; the subcostal and median nervures defined by ochreous streaks in cell; a leaden-coloured patch in submedian fold before the double antemedial line which is angled outwards below costa and above inner margin and inwards on vein 1; claviform large, brown defined by black and with pale streak through it, a bidentate whitish patch above and beyond it; orbicular and reniform with brown centres and whitish annuli defined by black, the former small, oblique elliptical; postmedial line double, bent outwards below costa, incurved at discal fold, below vein 4 oblique and minutely waved, some pale points on costa beyond it; subterminal line pale, with prominent dentate black marks before it below costa and at middle, angled outwards at vein 7, dentate to termen at veins 4, 3, and bent outwards to tornus, the area beyond it suffused with brown except at apex; a terminal series of small black lunules. Hind wing whitish tinged with brown, the terminal area fuscous, with more or less whitish on termen above tornus; cilia whitish; the underside whitish irrorated with fuscous, a discoidal lunule, curved postmedial line, and diffused subterminal band.

Hab. Hungary; S.E. Russia, Sarepta, 2 ♂, 1 ♀, Zeller & Leech Colls.; Armenia; Asia Minor, Pontus; W. Turkestan, Turcomania, Ferghana, Saisan, Issyk-kul; E. Turkestan, Ili, Kuldja, 1 ♂. *Exp.* 36 millim.

1154. Scotogramma nana.

Phalæna nana, Hüfn. Berl. Mag. iii. p. 398 (1767).
Noctua marmorosa, Bork Eur. Schmett. iv. p. 424 (1792); Frey, Beitr. i. pl. 4; Dup. Lép. Fr. Suppl. iii. p. 193, pl. 18. f. 5; Herr.-Schäff. Eur. Schmett., Noct. f. 65; Staud. Cat. Lep. pal. p. 159.
Noctua odontites, Boisd. Ind. Meth. p. 71 (1829).
Hadena microdon, Guen. Noct. ii. p. 96 (1852).

Head and thorax brown mixed with grey; tegulæ with black medial line; tarsi fuscous ringed with white; abdomen grey-brown. Fore wing grey mostly suffused with brown; a slight black streak in base of submedian fold; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved; claviform moderate, tinged with fuscous and defined by black, a bidentate pale mark beyond it below the cell; orbicular and reniform with fuscous centres and pale annuli defined by black, the former round or oblique elliptical; medial line oblique from costa to vein 2, then dentate; postmedial line double, somewhat dentate, bent outwards below costa, oblique to vein 4, then incurved, some pale points beyond it on costa; subterminal line whitish, defined on inner side by dentate black marks, angled outwards at vein 7, and dentate to near termen on veins 4, 3; a terminal series of small black lunules; cilia intersected with grey. Hind wing pale suffused

with brown, the terminal area fuscous; an indistinct pale line near termen between veins 5 and 1; cilia ochreous white; the underside grey irrorated with brown, a black discoidal lunule, curved postmedial line, and diffused subterminal band.

Ab. *microdon*. Much darker.

Hab. FRANCE, Pyrenees; GERMANY, Zeller and Leech Colls.; AUSTRIA, Styria, Leech Coll.; HUNGARY; SWITZERLAND, Leech Coll., Dombreson, Frey Coll.; SPAIN, Aragon; S.W. RUSSIA; W. TURKESTAN, Sarawschan; E. TURKESTAN, Kashgar; MONGOLIA, Urga; TIBET, Kuku-Nor. *Exp.* 30–36 millim.

Larva. Kirby, Eur. Butt. & Moths, p. 225.

Dark bluish with two lateral yellow stripes. Food-plants, *Hippocrepis comosa* and *Coronilla minima*. 7.

*1155. Scotogramma isoloma. (Plate LXXIX. fig. 3.)

Mamestra isoloma, Püng. Iris, 1903, p. 286, pl. vi. f. 2.

♂. Head and thorax grey mixed with brown and fuscous; tegulæ with dark lines at middle and near tips; patagia with some black scales near upper edge; abdomen grey-brown mixed with fuscous. Fore wing grey-brown, suffused with reddish brown especially on medial and terminal areas, the costa darker; the veins with dark streaks; the subbasal line represented by two very oblique black strigæ below cell; an oblique black striga above inner margin before the antemedial line which is obsolete on costal area, then waved; the median nervure and veins 4, 3, 2 defined by whitish streaks from antemedial to subterminal line; claviform very elongate, brown defined by black and with pale streak in middle; orbicular and reniform small and very narrow, brown with greyish annuli defined by black, the former oblique elliptical, the latter bar-shaped; postmedial line very indistinct, bent outwards below costa, incurved to upper angle of cell, angled outwards at vein 5, and bent inwards to lower angle of cell, then erect, some pale points on costa beyond it; subterminal line prominent, whitish, strongly defined on inner side by dentate blackish marks below costa and at middle, angled outwards at vein 7, and dentate to termen at veins 4, 3; a fine terminal line and line through the cilia. Hind wing pale, uniformly suffused with fuscous brown, the cilia pale; the underside pale, suffused and irrorated with fuscous brown, especially on costal area and terminal half.

Hab. W. TURKESTAN, Sarawschan, type † in Coll. Püngeler. *Exp.* 40 millim.

1156. Scotogramma submedianata, n. sp. (Plate LXXIX. fig. 4.)

♀. Head and thorax grey tinged with brown and with a few black scales; tegulæ with medial black line; metathoracic crest fuscous; abdomen brownish white, the basal crest blackish. Fore

wing ochreous whitish irrorated with brown; a black streak below basal half of cell; antemedial line indistinct, oblique, waved; orbicular and reniform incompletely defined by brown, the former elongate elliptical; traces of a curved medial shade; postmedial line very indistinct, produced to short streaks on the veins, bent outwards below costa, incurved at discal fold and below vein 4; subterminal line pale, defined by rich brown on inner side, the area beyond it fuscous, arising from apex and dentate at veins 4, 3; a terminal series of small black lunules. Hind wing semihyaline white, with fine brown terminal line except towards tornus; the underside with the costal area irrorated with brown and with some dark terminal points.

Hab. Br. E. Africa, Machakos (*Crawshay*), 1 ♀ type. *Exp.* 36 millim.

1157. Scotogramma ptilodonta. (Plate LXXIX. fig. 5.)

Trichopolia ptilodonta, Grote, Papilio, iii. p. 77 (1883); Smith, Cat. Noct. N. Am. p. 164.

♂. Head and thorax brownish grey mixed with fuscous, tarsi banded with fuscous; abdomen ochreous white. Fore wing pale brownish ochreous, thickly irrorated with brown and fuscous; a black streak below base of cell: subbasal line represented by two black striæ from costa; antemedial line represented by two black striæ from costa, then very indistinct, oblique, waved; claviform large, defined by black; orbicular and reniform large, defined by black, the former oblique elliptical, the latter with some fuscous in its lower part; faint traces of a medial line with more distinct striga at costa; postmedial line indistinct, double, with prominent dark striæ from costa, bent outwards below costa, then dentate and produced to black and white streaks on the veins, incurved at discal fold and strongly below vein 4; subterminal line very indistinct, pale, waved, angled outwards at vein 7 and excurved at middle, defined on inner side by some dark dentate marks most prominent at discal fold, the area beyond it suffused with fuscous; a terminal series of black points; a fine pale line at base of cilia. Hind wing pure white, with some black striæ on termen; the underside with the costal and terminal areas sparsely irrorated with black, a small discoidal spot, and postmedial series of short black streaks on the veins.

Hab. U.S.A., Arizona, Phœnix, 1 ♂. *Exp.* 34 millim.

1158. Scotogramma trifolii.

Noctua trifolii, Rott. Naturf. ix. p. 131 (1776); Hmpsn. Moths Ind. ii. p. 198; Staud. Cat. Lep. pal. p. 158; Smith, Cat. Noct. N. Am. p. 119.
Noctua chenopodii, Schiff. Wien. Verz. p. 82 (1776); Fabr. Mant. Ins. p. 156 (1787); Esp. Schmett. iv. pl. 181; Hübn. Eur. Schmett., Noct. f. 86; Dup. Lép. Fr. vii. p. 31, pl. 102. f. 3; Steph. Ill. Brit. Ent., Haust. ii. p. 195.
Noctua verna, Esp. Schmett. iv. pl. 117 A. ff. 5, 6 (1786).

Noctua saucia, Esp. Schmett. iv. pl. 152. f. 5 (1786).
Hadena treitschkii, Boisd. Ann. Soc. Linn. Paris, 1827, p. 111, pl. 6. f. 2; Dup. Lép. Fr. vii. p. 40, pl. 103. f. 1; Herr.-Schäff. Schmett. Eur., Noct. ff. 68, 69; Staud. Cat. Lep. pal. p. 159.
Noctua treitschkei, Hübn. Eur. Schmett., Noct. f. 850 (1827).
Noctua pugnax, Hübn. Eur. Schmett., Noct. ff. 726, 727 (1827).
Noctua farkasii, Treit. Schmett. Eur. x. 2, p. 74 (1835).
Hadena intermissa, Wlk. xi. 587 (1857).
Apamea inquieta, Wlk. xi. 730 (1857).
Hadena albifusa, Wlk. xii. 753 (1857).
Apamea glaucovaria, Wlk. Can. Nat. & Geol. v. p. 255 (1860).
Mamestra canescens, Moore, A. M. N. H. (5) i. p. 233 (1878); id. 2nd Yarkand Mission, p. 9, pl. 1. f. 13.
Mamestra oregonica, Grote, Can. Ent. xiii. p. 230 (1881).

Head and thorax grey mixed with brown; tegulæ with medial black line, patagia edged by some black scales above; tarsi banded black and white; abdomen pale ochreous mixed with brown. Fore wing grey, suffused and irrorated with pale reddish brown; a double, waved subbasal line from costa to vein 1; a double, oblique, waved antemedial line; claviform small to large, defined by black; orbicular and reniform defined by

Fig. 9.—*Scotogramma trifolii*, ♂. ½.

blackish, the former rounded or oblique elliptical, the latter extending to below cell and with its lower part suffused by fuscous; an indistinct irregular medial line oblique from costa to vein 2; postmedial line double, dentate, bent outwards below costa, excurved to vein 4, then incurved; the veins of terminal area slightly streaked with fuscous; subterminal line defined by rufous on inner side and usually with some small dentate dark marks before it at middle, angled outwards at vein 7 and dentate to termen on veins 4, 3, the area beyond it rather darker; a terminal series of small black lunules; cilia intersected with whitish. Hind wing whitish, the veins and inner area tinged with pale reddish brown, the terminal area suffused with fuscous; the underside white, the costal and terminal areas irrorated with fuscous, a small discoidal lunule and postmedial series of striæ on the veins.

Ab. 1. *farcasi*. Fore wing darker and more variegated.

Ab. 2. *oregonica*. Greyer; fore wing more thickly irrorated with pale brown.

Ab. 3. *treitschei*. Fore wing with the medial part of subterminal line defined by prominent dentate black marks on inner side.

Ab. 4. *albifusa*. Fore wing tinged with rufous and with white

suffusion on costal area and beyond postmedial line, the subterminal line with prominent dentate black marks on inner side at middle.

Hab. Canada (*Norman*), 2 ♂, Nova Scotia (*Redman*), 2 ♂, 1 ♀, type *albifusa*, Calgary (*Wolley Dod*), 1 ♂; U.S.A., Massachusetts, Beverly, 1 ♂, New York (*Fuchs*), 2 ♂, 2 ♀, Kansas, 2 ♀, Oregon 1 ♂, 3 ♀ type *oregonica*, Arizona, Prescott (*Kunze*), 2 ♂, 2 ♀, Phœnix, 1 ♂, Pinal Mts., 2 ♂, Globe, 1 ♀; Chili, 1 ♂ type *intermissa*; Britain, Leech Coll.; France; Germany, Zeller & Frey Colls.; Spain; Italy; Greece, 2 ♂; Algeria (*Mrs. Nicholl*), 1 ♀; Scandinavia; Russia, Livonia, 1 ♂; Syria, 1 ♀; W. Siberia, Altai, 1 ♂; W. Turkestan, Transcaspia, 3 ♂; Kashmir (*Pilcher*), 1 ♂, Scinde Valley (*Leech*), 1 ♂; Punjab, Campbellpur (*Verbury*), 1 ♂, Ferozpur (*Nurse*), 1 ♂; hab. ign. 1 ♀ type *inquieta*; Sikhim; Tibet, Yatung (*Hobson*), 1 ♂; Sokotra, Hadibu Plains (*W. R. O. Grant*), 1 ♂. *Exp.* 34–38 millim.

Larva. Meyr. Brit. Lep. p. 82; Barrett, Lep. Brit. iv. p. 202, pl. 159. f. 2.

Head luteous, darker reticulate. Body green or brown, finely blackish streaked; dorsal line fine, pale yellow, dark-edged; subdorsal line broader, black-bordered above; substigmatal line broad, yellowish on the edges, red filled, dark-edged above. Feet green; spiracles white. Food-plants, *Chenopodium* and *Atriplex*. 7–9.—H. G. D.

*1159. ? Scotogramma impolita.

Mamestra impolita, Morr. Pr. Bost. Soc. N. H. xvii. p. 140 (1874); Smith, Cat. Noct. N. Am. p. 129.

♂. Head, thorax, and abdomen grey mixed with fuscous, tegulæ grey with black medial line. Fore wing whitish, almost wholly suffused except the stigmata and postmedial area by black and fuscous shades: the scaling rough; the lines interrupted; subbasal line present; antemedial line single, irregular, obsolete below the claviform, which is large, rounded, whitish defined by black; orbicular and reniform large, whitish with grey centres and defined by black, the former oblique elliptical; medial shade blackish, suffused, irregular; postmedial line single, dentate, bent outwards below costa and strongly incurved below vein 4; postmedial area whitish, especially below costa and before middle of subterminal line, which is whitish defined by black shades before and beyond it, interrupted, dentate on veins 4, 3; some white points on costa towards apex and at base of cilia. Hind wing dark fuscous, paler towards base; cilia whitish; the underside whitish, with discoidal point and postmedial line.

Hab. Canada, Quebec. *Exp.* 36 millim. This species is unknown to me.

*1160. ? Scotogramma hadeniformis. (Plate LXXXVI. fig. 3.)

Mamestra hadeniformis, Smith, Trans. Am. Ent. Soc. xxi. p. 55, pl. v. f. 4 (1894); Dyar, Cat. Lep. N. Am. p. 155.

Head, thorax, and abdomen pale luteous grey irrorated with

black; tegulæ with broad ill-defined luteous band: patagia with blackish scales near edges. Fore wing pale yellowish grey irrorated with black, a deeper ashen shade on inner margin and on terminal area; subbasal line double, filled in with paler colour, angled on median nervure; antemedial line very indistinct, double, excurved in interspaces; claviform rather short and broad, indistinctly defined by black; orbicular and reniform large, with slight grey annuli indistinctly defined by black, the reniform with rather darker centre; a diffused medial shade; postmedial line double at costa and inner margin, defined by whitish on outer side, crenulate, incurved below vein 4; subterminal line white, angled outward at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules; a fine pale line at base of cilia. Hind wing white tinged with fuscous, the veins and terminal area darker especially in female; cilia white with a dark line through them; the underside whitish irrorated with fuscous, a discoidal lunule and intercepted postmedial line.

Hab. U.S.A., Colorado. *Exp.* 32 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

1161. Scotogramma stigmosa.

Mamestra stigmosa, Christ. Rom. Mém. iii. p. 70, pl. 3. f. 12 (1887); Staud. Cat. Lep. pal. p. 158.

♂. Head, thorax, and abdomen white mixed with pale brown; tibiæ and tarsi banded with black. Fore wing white irrorated with brown, the costa darker; the subbasal line interrupted, waved from costa to submedian fold, the antemedial line rather ill-defined and irregular, angled inwards on vein 1 and outwards above inner margin, the claviform represented by some black scales on its outer edge; orbicular and reniform brown incompletely defined by black; the former round, the latter rather constricted at middle; traces of a medial line oblique from costa to lower angle of cell; postmedial line somewhat dentate and produced to black and white points on the veins, bent outwards below costa, and incurved below vein 4, the area beyond it rather darker; the subterminal line represented by a series of small whitish marks, defined on inner side by a dark patch on costa and two slight dentate marks at middle, angled outwards at vein 7 and slightly dentate at veins 4, 3; a terminal series of small dark lunules; cilia chequered brown and white. Hind wing white; the veins irrorated with brown; a diffused brown subterminal band; the underside with the costal and terminal areas irrorated with brown, a small discoidal lunule.

Hab. S. Russia, Sarepta, 1 ♂; W. Turkestan, Turcomania, Ferghana, Issyk-kul; E. Turkistan, Kashgar. *Exp.* 32 millim.

1162. Scotogramma agrotiformis. (Plate LXXIX. fig. 6.)

Hadena agrotiformis, Hmpsn. Moths Ind. iv. p. 508 (1896).

♂. Head and thorax fuscous mixed with white; abdomen

brownish grey, the dorsal crests blackish tipped with white. Fore wing whitish suffused with fuscous and pale brown; subbasal line waved, from costa to submedian fold, with a slight black streak beyond its extremity; antemedial line waved; claviform well-developed, defined by black; orbicular and reniform defined by black, the former round with pale annulus, the latter large, filled in with fuscous; postmedial line dentate and produced to white points on the veins which are streaked with black beyond it, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line very indistinct, white, dentate, with slight dentate dark marks before it at middle; a terminal series of white points and small black lunules. Hind wing white; the veins and terminal area tinged with brown; the underside with the costal area irrorated with brown, a slight discoidal spot and curved postmedial line.

Hab. Ceylon, Putlam (*J. Pole*), 2 ♂ type. *Exp.* 30 millim.

1163. Scotogramma sodæ.

Hadena sodæ, Rmbr. Ann. Sci. Obs. 1829, p. 250, pl. 6. f. 7; Geyer, Eur. Schmett., Noct. f. 851; Dup. Lép. Fr. Suppl. iii. p. 274, pl. 25. f. 4; Herr.-Schäff. Schmett. Eur., Noct. ff. 60, 66–7; Staud. Cat. Lep. pal. p. 158.

Head and thorax grey mixed with pale brown; tegulæ with black lines at middle and tips; patagia edged with black above; tarsi blackish ringed with white; abdomen grey tinged with brown or fuscous. Fore wing grey, slightly irrorated with fuscous and often tinged with rufous; subbasal line indistinct, double, waved, from costa to submedian fold; claviform small or moderate, fuscous defined by black; orbicular and reniform defined by black, the former small, round, with fuscous centre, the latter filled in with fuscous except above; a waved medial line; postmedial line dentate and produced to black and white streaks on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line pale, defined on inner side by a fuscous patch at costa and dentate marks at middle, angled outwards at vein 7 and dentate at veins 4, 3, some fuscous suffusion beyond it except at apex; a terminal series of small black lunules; cilia brownish intersected with fuscous. Hind wing grey suffused with fuscous; the terminal area fuscous with a pale patch on termen at submedian fold; cilia whitish or ochreous; the underside whitish, the costal and terminal areas irrorated with fuscous, a discoidal spot, indistinct curved postmedial line, and some lunules on termen.

Hab. S. France, Leech & Zeller Colls.; Spain; Italy; Greece; Algeria; ? Armenia; ? W. Turkestan, Turcomania. *Exp.* 32–36 millim.

1164. Scotogramma defessa. (Plate LXXIX. fig. 7.)

Mamestra defessa, Grote, Can. Ent. xii. p. 88 (1880); Smith, Cat. Noct. N. Am. p. 122.

♀. Head, thorax, and abdomen pale brownish ochreous with slight dark irroration; tarsi with dark bands. Fore wing very pale brownish ochreous with slight dark irroration; the subbasal line represented by double brown striæ from costa and cell; the antemedial line rather indistinct except at costa, double, waved, oblique; claviform small, defined by black, orbicular and reniform incompletely defined by black, the former round, open above and below, the latter with fuscous patch in lower part; an indistinct waved medial line angled on median nervure; postmedial line double at costa, then indistinct, strongly dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line represented by a series of somewhat dentate dark marks angled outwards at vein 7, excurved at middle and to tornus; a terminal series of small black lunules. Hind wing white; the veins brownish; the terminal area suffused with brown narrowing to a point at tornus; a terminal series of dark lunules; cilia white; the underside with the costal and terminal areas irrorated with pale brown, a dark discoidal lunule, and postmedial series of striæ on the veins.

Hab. U.S.A., California, Santa Clara (*Osten Sacken*), 2 ♀ type. *Exp.* 30–40 millim.

*1165. ? Scotogramma repentina.

Mamestra repentina, Morr. Proc. Bost. Soc. N. H. xviii. p. 118 (1875); Smith, Cat. Noct. N. Am p. 123.

♀. Head, thorax, and abdomen pale grey; tegulæ with black medial line; patagia with black lines near edges. Fore wing pale grey, the medial area fuscous; subdorsal line double, filled in with fuscous; antemedial line double, erect, waved; claviform obsolete; orbicular large, pale, round; reniform pale with a fuscous tinge, ill-defined; medial line strongly dentate; postmedial line double, waved, incurved below vein 4, with a dark shade beyond it indistinct except at costa; subterminal line yellowish fuscous, defined on inner side by a dark shade, sinuous; a terminal series of small black lunules; cilia white at tips. Hind wing fuscous, paler at base; the underside paler with the termen fuscous.

Hab. U.S.A., New Jersey, W. Hoboken. *Exp.* 33 millim. This species is unknown to me.

*1166. Scotogramma orida. (Plate LXXIX. fig. 8.)

Mamestra orida, Smith, Can. Ent. xxxv. p. 12 (1903).

Head and thorax white, thickly irrorated with black and dark brown; abdomen less thickly irrorated; tarsi ringed with white. Fore wing white, thickly irrorated with fuscous black; the subbasal

line represented by slight striæ from costa and cell; traces of a waved antemedial line with two more prominent points at costa; claviform slightly defined by black; orbicular and reniform with fuscous centres and white annuli defined by fuscous, the former small, round, the latter with fuscous patch in its lower part; postmedial line indistinct, dentate, with more prominent points at the veins, bent outwards below costa, excurved to vein 4, then incurved; the subterminal line white, with a fuscous patch beyond it at middle, angled outwards at vein 7 and dentate at veins 4 and 3; a terminal series of black points. Hind wing white, the veins tinged with fuscous; a terminal fuscous-black band narrowing to tornus; the underside with the costal area irrorated with fuscous, a diffused subterminal band.

Hab. U.S.A., Utah, Stockton, co-type †♂ ♀ in Coll. Rothschild. *Exp.* 34 millim.

1167. Scotogramma implexa.

Noctua implexa, Hübn. Eur. Schmett., Noct. f. 414 (1827); Alph. Rom. Mém. v. p. 233, pl. xii. f. 1; Staud. Cat. Lep. pal. p. 158.
Apamea fallovi, Oberth. Et. Ent. i. p. 45, pl. 4. f. 2 (1876).

Head and thorax ferruginous red-brown mixed with a few white scales; abdomen greyish tinged with red-brown. Fore wing ferruginous red-brown irrorated with white scales, especially on the costal area and veins; an indistinct waved white subbasal line; antemedial line waved, white, somewhat oblique; claviform absent; orbicular and reniform moderate, brown prominently defined by white, the former round, the latter somewhat constricted at middle; postmedial line defined by whitish on outer side, minutely waved, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line fine, waved, white, somewhat angled outwards at vein 7 and excurved at middle; a fine waved white terminal line. Hind wing pale, suffused with reddish brown; a curved whitish postmedial line and a slight waved whitish terminal line; the underside whitish irrorated with red-brown.

Hab. Hungary; S. Russia; Algeria, type † *fallovi* in Coll. Oberthür; Armenia; Syria; Transcaucasia, Geok Tepe, 1 ♂. *Exp.* 34 millim.

1168. Scotogramma peculiaris.

Mamestra peculiaris, Staud. Stett. ent. Zeit. 1888, p. 16; id. Cat. Lep. pal. p. 159.

♂. Fore wing grey-white mixed with some blackish; frons with blackish bar above; tegulæ with black medial line and tips; patagia edged with black; tarsi banded with black; abdomen ochreous white irrorated with yellow-brown. Fore wing whitish, suffused with yellow-brown and irrorated with blackish; subbasal line double, filled in with white, waved and extending to vein 1; an oblique black striga above inner margin near base; the ante-

medial line double, filled in with white, angled outwards below costa, then oblique and waved; claviform moderate, defined by black; orbicular and reniform moderate, with brown centres and white annuli defined by black, the former round, the latter with some black in its lower part; an indistinct, curved, diffused medial line; postmedial line defined by white on outer side, minutely dentate, bent outwards below costa, excurved to vein 4, then oblique; some white points on costa towards apex; subterminal line white, defined on inner side by slight dentate blackish marks at middle, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules; cilia intersected with white. Hind wing white, the terminal area suffused with fuscous; the cilia white; the underside with the costal area irrorated with brown, a small discoidal spot, slight sinuous postmedial line, and diffused subterminal band.

Hab. W. Turkestan, Sarawschan, 1 ♂. *Exp.* 38 millim.

1169. **Scotogramma submarina.** (Plate LXXIX. fig. 10.)

Anarta submarina, Grote, Can. Ent. xv. p. 4 (1883); Smith, Cat. Noct. N. Am. p. 129.

Head and thorax ochreous white mixed with dark brown; tarsi with dark bands; abdomen ochreous white, dorsally tinged with brown; the anal tuft ochreous. Fore wing ochreous white thickly irrorated with brown; a dentate subbasal line from costa to submedian fold; a waved antemedial line angled inwards on vein 1, with two points at costa; a slight medial shade; reniform represented by a slight dark lunule; postmedial line highly dentate, bent outwards below costa, excurved to vein 4, then oblique, some pale points beyond it on costa; faint traces of a subterminal line angled outwards at vein 7 and excurved at middle; a terminal series of slight dark lunules; cilia chequered brown and white. Hind wing whitish tinged with brown; the terminal area suffused with brown; a slight discoidal point and postmedial series of striæ on the veins.

Hab. U.S.A., Montana, Oregon, Arizona, Black Hills, 1 ♀. *Exp.* 32 millim.

1170. **Scotogramma mendosica**, n. sp. (Plate LXXIX. fig. 11.)

♀. Head and thorax grey mixed with brown and a few flesh-coloured scales; tarsi with white rings; abdomen grey mixed with dark brown and ochreous. Fore wing brownish flesh-colour thickly irrorated with black; the subbasal line represented by dark points below costa and cell; the antemedial line indistinct, oblique from costa to submedian fold, then erect; claviform represented by a slight dark spot; orbicular and reniform obsolete; traces of a dark medial shade; postmedial line indistinct, strongly dentate, slightly bent outwards below costa, excurved to vein 4, then oblique; subterminal line represented by an indistinct series of pale points

defined by slight dentate dark marks on inner side, slightly angled outwards at vein 7 and excurved at middle; a terminal series of dark points; a flesh-coloured line at base of cilia. Hind wing pale, suffused with fuscous brown especially towards termen; cilia pale, with a brown line through them; the underside whitish irrorated with brown, a slight discoidal spot and indistinct curved post-medial line.

Hab. Argentina, Aconcagua (*Fitzgerald*), 1 ♀ type. *Exp.* 36 millim.

Genus **CATEPHIODES**, nov.

Type, *C. zuelana*.

Proboscis fully developed; palpi upturned, the 2nd joint nearly reaching vertex of head and smoothly scaled in front, the 3rd oblique, long; frons with slight rounded prominence with corneous plate below it; eyes large, rounded; antennæ of female ciliated; head and thorax clothed with scales, the pro- and metathorax with spreading crests; tibiæ slightly fringed with hair, the inner spurs very long; abdomen with dorsal crests. Fore wing broad, triangular, the termen retracted towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

1171. Catephiodes zuelana.

Hadena zuelana, Schaus, J. N.Y. Ent. Soc. vi. p. 143 (1898).
Ædia trinidadensis, Kaye, Trans. Ent. Soc. 1901, p. 123, pl. 5. f. 3.

♀. Head ochreous more or less tinged with rufous; thorax red-brown, with some black on extremity of patagia and metathorax; tarsi ringed with white; abdomen black-brown, dorsally irrorated with rufous, ventrally with grey; the anal tuft ochreous. Fore wing dark brown suffused with rufous, the terminal half more or less suffused with whitish and with some bluish white below costa and between veins 5 and 3; subbasal line represented by black

Fig. 10.—*Catephiodes zuelana*, ♀. ½.

striæ from costa and cell; antemedial line black, irregularly sinuous, inwardly oblique; orbicular and reniform small, defined by black, the former round, the latter indistinctly defined except on inner side; a waved medial line or dark shade; postmedial line minutely and irregularly dentate, very strongly bent outwards below costa, incurved at discal fold, below vein 4 incurved to below angle of

cell; subterminal line slight, white defined by black on inner side, angled outwards at vein 7, bent inwards at discal fold, incurved below vein 3 and defined by white on outer side; a terminal series of small black lunules. Hind wing semihyaline white, the costal and terminal areas broadly and the inner area narrowly black-brown; some white marks on lower half of termen and a striga above tornus; cilia intersected with white; the underside with the costal and terminal areas suffused with grey, a small dark discoidal spot and postmedial line with dark striæ on the veins.

Hab. Trinidad, Arima, 2 ♀ type *trinidadensis*; Venezuela, 1 ♀, Aroa, type † ♀ in Coll. Schaus. *Exp.* 28–34 millim.

Genus **ANARTA**.

Type.

Anarta, Ochs. Schmett. Eur. iv. p. 90 (1816), non descr.; Treit. Schmett. Eur. v. (3) p. 200 (1826) ..... *myrtilli*.
Magellana, Staud. Hamburg. Magalhaens. iv. p. 77 (1899) ..... *trisema*.

Proboscis fully developed; palpi upturned, short, fringed with hair; frons with slight rounded prominence with small corneous plate below it; eyes small, reniform, not ciliated; antennæ of male typically minutely serrate and ciliated; thorax clothed with hair and hair-like scales, pro- and metathorax with slight spreading crests; tibiæ fringed with hair; abdomen clothed with rough hair, a dorsal crest on basal segment and lateral fringes of hair. Fore wing with the termen evenly curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole, 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base.

Sect. I. (*Magellana*). Antennæ of male strongly serrate and fasciculate; fore wing very narrow.

*1172. Anarta trisema.

Anarta trisema, Mab. Bull. Soc. Philom. (7) ix. p. 64 (1885); id. Miss. Sci. Cap Horn, vi. p. 20, pl. 1. f. 9.

♂. Head and thorax black mixed with grey and some dark red hairs; abdomen black above, with some grey hair at base on ventral

Fig. 11.—*Anarta trisema*, ♂. ½.

surface. Fore wing grey-white irrorated with black, blackish basal marks on costa and below cell; the medial area black irrorated with red, defined on inner side by the antemedial line, which is oblique from costa to cell, where it is angled inwards, then angled

outwards on vein 1 to near postmedial line and with a diffused black and red patch before it on inner area; claviform an elongate white streak extending from near the antemedial to across the postmedial line; orbicular and reniform small, whitish, the 1st oblique oblong, the latter an oblique bar angled inwards on median nervure; postmedial line outwardly oblique from costa to discal fold, where it is angled, then very oblique, a series of short red and black streaks beyond it with a longer black streak on costa and on veins 4, 3, and 2 extending to termen; some dentate black and red marks on termen from below apex to middle; cilia chequered black and white. Hind wing grey, suffused with black on inner and terminal areas.

Hab. Tierra del Fuego, type † ♂ in Mus. Paris. *Exp.* 20 millim.

Sect. II. Antennæ of male minutely serrate and fasciculate.

A. Hind wing white.
  a. Fore wing with the subterminal line angled inwards in discal fold ..... *staudingeri.*
  b. Fore wing with the subterminal line not angled inwards in discal fold.
    a^1. Fore wing with prominent series of dentate black marks before subterminal line ..... *richardsoni.*
    b^1. Fore wing without series of dentate black marks before subterminal line ..... *quadrilunata.*
B. Hind wing yellowish ..... *leucogyla.*
C. Hind wing uniformly suffused with fuscous.
  a. Fore wing with the stigmata not filled with blue-grey... *etacta.*
  b. Fore wing with the stigmata filled with blue-grey ..... *membrosa.*

1173. Anarta staudingeri. (Plate LXXIX. fig. 12.)

Anarta staudingeri, Auriv. Nord. Fjär. p. 176 (1891); Staud. Cat. Lep. pal. p. 219.
Anarta mœschleri, Staud. Cat. Lep. pal. p. 219 (1901).

Head and thorax black-brown mixed with white; tarsi black ringed with white; abdomen dark brown mixed with grey. Fore wing black-brown irrorated with white, and often with some olive-yellow in submedian fold and on inner margin; subbasal line indistinct, waved, from costa to submedian fold, some whitish on its outer edge; antemedial line oblique, waved, with some whitish on its inner side; claviform a small black mark; orbicular and reniform small, white defined by black, the former round; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved, defined by white on outer side and with white points beyond it on costa; subterminal line whitish or yellow, defined by a series of more or less conjoined black marks on outer side, angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia chequered brown and white. Hind wing white, the basal and inner areas suffused with fuscous; a dark discoidal lunule; a more or less prominent waved postmedial line; a broad terminal band with diffused inner edge; cilia white.

Ab. 1. *morschleri*. Fore wing more distinctly marked with grey.—Labrador.

Hab. Canada, Labrador, 2 ♂, 1 ♀, Zeller & Frey Colls.; Norway, mountains, Lapland 3 ♂, 2 ♀, Zeller & Leech Colls. *Exp.* 28–30 millim.

1174. Anarta richardsoni.

Hadena richardsoni, Curt. Ross' Narr. 2nd Voy., App. p. 72, pl. A. f. 11 (1834); Auriv. Bih. K. S. Vet.-Ak. Handl. 1890, p. 18, pl. 1. f. 12 & pl. 3. f. 4; Staud. Cat. Lep. pal. p. 218; Smith, Cat. Noct. N. Am. p. 293.
Anarta algida, Lef. Ann. Soc. Ent. Fr. v. p. 395, pl. x. f. 5 (1836); Dup. Lép. Fr. iii. Suppl. pl. 49. f. 6; Herr.-Schaff. Schmett. Eur., Noct. f. 400.
Anarta septentrionis, Wlk. xi. 700 (1857).
Anarta lanuginosa, Smith, Proc. Wash. Acad. Sci. ii. p. 492 (1900).
Anarta dovrensis, Staud. Cat. Lep. pal. p. 218 (1901).
Anarta asiatica, Staud. Cat. Lep. pal. p. 218 (1901).

Head, thorax, and abdomen black-brown mixed with grey-white; tegulæ white at base and tips; patagia with white fascia; tarsi black with white bands. Fore wing black-brown slightly irrorated with white, and with some olive-yellow in discal and submedian folds and on inner margin; subbasal line black, waved from costa to submedian fold, strongly defined with white on outer side and with a black spot beyond it below the cell; antemedial line black, waved, interrupted, defined by white on inner side; claviform moderate, black, with yellow spot on it and a white spot beyond it;

Fig. 12.—*Anarta richardsoni*, ♂. ½.

orbicular and reniform white with some yellow on them, defined by black and with some black at centre, the former small and rounded or large and quadrate, open above and below; the postmedial line dentate, bent outwards below costa, excurved to vein 4, then strongly incurved, defined by white on outer side and with white points beyond it on costa, the area beyond it more or less strongly suffused with grey; subterminal line white, angled outwards at vein 7 and excurved at middle, defined on inner side by a series of dentate black marks, strongest at middle and submedian fold; a terminal series of small black lunules; cilia chequered white and black-brown. Hind wing white, the basal and inner areas suffused with black; a black discoidal lunule; a more or less visible waved postmedial line; a broad terminal band with rather diffused inner edge; cilia white; the underside with the terminal band obsolescent.

Ab. 1. *dovrensis*. Fore wing with slight grey markings; hind wing almost wholly suffused with fuscous.—Dovrefeld.

Ab. 2. *asiatica*. Fore wing fuscous or grey-brown with slight grey markings, sometimes almost uniform in colour.—E. Siberia.

Hab. Grinnell Land (*Feilden*), 1 ♂; Greenland, 1 ♀, Zeller Coll.; Canada, Hudson's Bay, Repulse Bay (*Rea*), 1 ♂, shore of Arctic Ocean (*Sir T. Richardson*), 1 ♂, 2 ♀, type *septentrionis*, Labrador, Zeller & Frey Colls., 5 ♂, 3 ♀; Alaska; Scandinavia, Dovrefield, Lapland, 1 ♂; Novaya Zembla, Schubert Bay, 1 ♀, Grote Coll. *Exp.* 34–38 millim.

1175. Anarta quadrilunata. (Plate LXXIX. fig. 13.)

Anarta quadrilunata, Grote, Proc. Bost. Soc. xvi. p. 244 (1874); Smith, Cat. Noct. N. Am. p. 293.

♀. Head, thorax, and abdomen clothed with white, brown, and black hair; tarsi black ringed with white; anal tuft yellow. Fore wing whitish thickly irrorated with pale brown; subbasal line indistinct, dark, from costa to submedian fold; antemedial line oblique from costa to submedian fold, where it is angled, then erect and angled inwards on vein 1; claviform and orbicular obsolete; reniform represented by a dark lunule; postmedial line indistinct, dentate, bent outwards below costa, excurved to vein 4, then strongly incurved; traces of a subterminal line, more prominent towards costa and angled outwards at vein 7; a terminal series of dark spots. Hind wing white, the basal and inner areas suffused with fuscous; a black discoidal lunule and broad terminal band with sinuous inner edge; cilia white.

Hab. U.S.A., Colorado, 1 ♀ type. *Exp.* 34 millim.

1176. Anarta leucocycla.

Anarta leucocycla, Staud. Stett. ent. Zeit. 1857, p. 296; Möschl. Wien. ent. Mon. 1860, p. 367, pl. 9. f. 6; Auriv. Bih. K.S. Vet.-Ak. Handl. 1890, p. 19, pl. 1. f. 11 & pl. 3. f. 3; Staud. Cat. Lep. pal. p. 219; Smith, Cat. Noct. N. Am. p. 293.

Head and thorax black-brown mixed with white; tarsi black ringed with white; abdomen grey-brown. Fore wing black-brown sparsely irrorated with white; an ill-defined waved white subbasal line from costa to vein 1; an ill-defined waved white antemedial line; orbicular and reniform small, defined by white, the former round; postmedial line white, strongly dentate, bent outwards below costa and oblique below vein 4, some white points on costa beyond it; subterminal line white, angled outwards at vein 7 and inwards at discal and submedian folds, excurved at middle; a waved white terminal line; cilia chequered brown and ochreous white. Hind wing yellowish irrorated with black-brown, the lower part of cell and inner area suffused with black-brown; a black discoidal

lunule: the terminal area broadly black-brown, narrowing to tornus: cilia yellowish white, brown at base; underside similar, traces of a curved postmedial line, the terminal band narrower and with waved inner edge.

Hab. Greenland, 1 ♂, 1 ♀. *Exp.* 28 millim.

*1177. Anarta etacta. (Plate LXXXVI. fig. 4.)

Anarta etacta, Smith, Proc. Wash. Acad. Sci. ii. p. 493 (1900); Dyar, Cat. Lep. N. Am. p. 159.

♀. Head, thorax, and abdomen whitish largely mixed with fuscous; tegulæ whitish at base, then blackish and with grey tips; patagia with blackish line near margin. Fore wing grey mixed with fuscous and irrorated with moss-green; the lines white edged with black scales and with double black spots at costa; subbasal line bidentate; antemedial line oblique, somewhat dentate and bent outwards above inner margin; claviform well developed, defined by pale moss-green; orbicular and reniform with white annuli defined by black, the former moderate, round, the latter large; postmedial line bent outwards below costa and incurved below vein 4, some white points beyond it on costs; subterminal line somewhat dentate, only defined by the fuscous shade on its inner side and by the area beyond it being greenish; a terminal series of black lunules; cilia chequered white and fuscous. Hind wing fuscous with terminal series of blackish lunules preceded by whitish; the underside rather paler, with small discoidal spot.

Hab. Alaska, Kukak Bay. *Exp.* 36 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

*1178. Anarta membrosa.

Anarta membrosa, Morr. Ann. Lyc. Nat. Hist. N.Y. xi. p. 101 (1875); Smith, Cat. Noct. N. Am. p. 294.

♀. Head, thorax, and abdomen black mixed with grey; tegulæ grey, with a terminal black band. Fore wing dark grey, with the markings black; the lines defined by clear blue-grey; the subbasal line strong, uneven, followed by a blue-grey tinge extending to apex; antemedial line distinct, strongly excurved in the interspaces; claviform represented by a diffused black patch extending to postmedial line; orbicular and reniform filled in with clear blue-grey and defined by black, a black medial shade passing between them; postmedial line fine, dentate, incurved below vein 4, dilated into a spot at submedian fold; terminal area bluish grey with a blackish patch on costa with three blue-grey points on it; subterminal line pale defined by blackish shades most prominent towards costa, dentate on veins 4, 3; cilia chequered black and white. Hind wing fuscous with indistinct discoidal point and

curved postmedial line ; cilia black and white ; the underside with discoidal spot and prominent waved postmedial line.

Hab. U.S.A., New Hampshire, White Mts. *Exp.* 33 millim. This species is unknown to me.

Sect. III. (*Anarta*). Antennæ of male ciliated.

A. Hind wing bright yellow.
  a. Fore wing with the ground-colour deep red ..... *myrtilli.*
  b. Fore wing with the ground-colour blackish.
    a^1. Fore wing with the reniform filled in with whitish ... *cordigera.*
    b^1. Fore wing with the reniform not filled in with white ... *mimuli.*
B. Hind wing yellowish, tinged with brown ..... *impingens.*
C. Hind wing uniform brown ..... *phæa.*
D. Hind wing white, sometimes completely suffused with fuscous on upperside.
  a. Fore wing broad, triangular.
    a^1. Fore wing without whitish annuli to the reniform ..... *melanopa.*
    b^1. Fore wing with whitish annuli to the reniform ..... *mimula.*
  b. Fore wing narrow, elongate.
    a^1. Fore wing pale olive-grey ..... *mausi.*
    b^1. Fore wing fuscous ..... *zemblica.*

1179. Anarta myrtilli.

Noctua myrtilli, Linn. Faun. Suec. p. 311 (1746); Esp. Schmett. iv. pl. 165. ff. 1–3; Hübn. Eur. Schmett., Noct. f. 98; Dup. Lép. Fr. vii. p. 286. pl. 118. f. 1; Steph. Ill. Brit. Ent., Haust. iii. p. 111; Curt. Brit. Ent. pl. 145; Staud. Cat. Lep. pal. p. 218.
Anarta acadiensis, Beth. Tr. Nov. Soc. Ins. Nat. Sci. ii. p. 84 (1869); Smith, Cat. Noct. N. Am. p. 292.
Anarta alpina, Raetzer, Mitth. Schweiz. ent. Ges. viii. p. 224 (1890).

Head and thorax deep red, palpi black at tips, lower part of frons, base of tegulæ, middle and tips of patagia, and metathoracic crest white, the vertex of head, tips of tegulæ, and greater part of

Fig. 13.—*Anarta myrtilli*, ♂. ½.

thorax ochreous ; tarsi black banded with white ; abdomen black-brown with ochreous segmental lines, the dorsal crest and anal tuft red, the lateral hair ochreous, the ventral surface ochreous and red. Fore wing deep red, pale olive-brown in parts ; the subbasal line double, waved, from costa to submedian fold, filled in with white ; the antemedial line double, oblique, waved, filled in with olive-brown and white, the claviform a minute spur on its outer side ; the medial area with more or less white suffusion and prominent triangular spot on median nervure : orbicular and reniform

small, olive-brown defined by deep red, the former round; an indistinct medial line angled at median nervure; postmedial line minutely dentate, bent outwards below costa, excurved to vein 4, then incurved, angled outwards on vein 1, defined by olive-brown on outer side, the veins beyond it more or less streaked with white, some white points on costa; subterminal line prominent, white, angled outwards at vein 7 and middle and excurved to tornus; a fine dark terminal line; cilia intersected with white. Hind wing orange-yellow, the base, costal area, and a broad terminal band black-brown, a black fascia on vein 1; cilia yellowish white; the underside with the costal area red traversed by a black line at inner edge of terminal band, a small black discoidal lunule.

Ab. 1. Head, thorax, and fore wing with the red almost entirely replaced by black.—Hyères.

Ab. 2. *alpina*. Fore wing obscure red-brown with the markings almost obsolete; hind wing with the orange reduced.—Germany, Switzerland, Spain.

Hab. Canada, Nova Scotia; Britain, Leech Coll.; France, Sand Coll., Hyères (*Yerbury*); Germany, Zeller & Frey Colls.; Switzerland; Spain; Italy; Russia, Livonia. *Exp.* 24–28 millim.

Larva. Meyr. Brit. Lep. p. 87; Barrett, Lep. Brit. vi. p. 226, pl. 251. f. 1.

Green, sometimes tinged with brown and with scattered pale yellowish or whitish marks, and dorsal, subdorsal, and spiracular series of whitish spots. Food-plant, *Erica*. 8–9.

1180. Anarta cordigera.

Noctua cordigera, Thunb. Mus. Nat. Ac. Ups. Diss. p. 72, pl. vi. f. 4 (1788); Esp. Schmett. pl. 189. f. 2; Dup. Lép. Fr. vii. pl. 118. f. 2; Hübn. Eur. Schmett., Noct. ff. 674–5; Staud. Cat. Lep. pal. p. 218; Smith, Cat. Noct. N. Am. p. 292.

Noctua albirena, Hübn. Eur. Schmett., Noct. f. 99 (1827).

Anarta luteola, Grote & Rob. Proc. Ent. Soc. Phil. iv. p. 493, pl. iii. ff. 5, 6 (1865).

Anarta æthiops, Hoffm. Stett. ent. Zeit. 1893, p. 128.

Anarta suffusa, Tutt. Brit. Noct. iii. p. 130 (1892).

Anarta carbonaria, Christ. Iris, vi. p. 92 (1893); Alph. Rom. Mém. ix. p. 219, pl. 14. f. 10.

Head, thorax, and abdomen black-brown slightly irrorated with grey. Fore wing black-brown, the basal and terminal areas suffused with blue-grey, the median area slightly irrorated with grey; a slightly-waved black subdorsal line from costa to submedian fold: an oblique slightly-waved antemedial line; claviform moderate, defined by black; orbicular and reniform defined by black; the former small, round, the latter large, filled in with white, and with a dark lunule on its upper part; an indistinct medial shade; postmedial line minutely dentate, bent outward below costa, excurved to vein 4, then incurved; a subterminal interrupted dentate black line, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia black intersected with grey. Hind wing orange-yellow; the base with diffused black streaks; the costal area black; a broad terminal black band; cilia whitish.

Underside of fore wing black-brown, with large curved yellowish discal patch.

Ab. 1. *æthiops*. Fore wing almost entirely black except the reniform stigma.

Ab. 2. *carbonaria*. Like *æthiops*, but the underside of fore wing yellow with the marginal areas dark.—S.E. Siberia.

Hab. Canada, Labrador; U.S.A., Colorado; Britain, Scotland, Leech Coll.; France; Germany, Zeller Coll.; Switzerland, Frey Coll.; Spain, Aragon; Norway, Zeller Coll.; Russia, Finland, Leech Coll., Livonia, Zeller Coll., St. Petersburg, Zeller Coll., Urals; N.E. Siberia; Amurland. *Exp.* 26–28 millim.

Larva. Meyr. Brit. Lep. p. 87; Barrett, Lep. Brit. vi. p. 223, pl. 250. f. 3.

Purplish brown mixed with black; dorsal line whitish; subdorsal line indistinct; subspiracular line brownish ochreous marked with red. Food-plant, *Vaccinium*. 7–8.

*1181. Anarta mimuli.

Anarta mimuli, Behr. Cal. Ac. Sci. 1885, p. 62; Smith, Cat. Noct. N. Amer. p. 295.

Head, thorax, and abdomen blackish. Fore wing blackish; the lines indistinct and slightly defined by whitish; the subterminal line expanding into a spot at tornus. Hind wing yellow, with prominent black terminal band.

Hab. U.S.A., California. *Exp.* —? This species is unknown to me.

Larva. Similar to that of *A. myrtilli*. Food-plants: *Eunanus tolmiei*, *Antirrhinum kingii*, and *Mimulus scrophularia*.

1182. Anarta impingens. (Plate LXXIX. fig. 14.)

Anarta impingens, Wlk. xi. 700 (1857); Smith, Cat. Noct. N. Am. p. 294.
Mamestra curta, Morr. Ann. Lyc. Nat. Hist. N. Y. xi. p. 96 (1875).
Anarta nivaria, Grote, Ann. Lyc. Nat. Hist. N. Y. xi. p. 107 (1875).
Orthosia perpura, Morr. Proc. Ac. Nat. Sci. Phil. 1875, p. 66.

♂. Head and thorax lilacine grey irrorated with fuscous; abdomen reddish brown. Fore wing lilacine grey irrorated with brown; subbasal line indistinct, waved, from costa to submedian fold; antemedial line rather oblique, waved, strongly excurved at submedian fold; claviform represented by a slight blackish mark; orbicular and reniform very indistinctly defined, the former round, a strong diffused medial shade passing between them; postmedial line dentate, bent outwards below costa, excurved to vein 4, then strongly incurved; subterminal line pale, defined on inner side by a brown shade and an ill-defined series of small dentate dark marks, angled outwards at vein 7 and excurved at middle; a terminal series of dark lunules. Hind wing yellowish, suffused with reddish brown, and with a diffused terminal brown band broad at apex, narrowing to tornus; a dark discoidal lunule; cilia yellowish; the underside yellower, the discoidal lunule prominent, a terminal series of dark striæ.

♀. Much darker.

Hab. Canada, S. Br. Columbia (*Lord Derby*), 2 ♂ type; U.S.A., Colorado, 2 ♂, 1 ♀, type *nivaria*, Grote Coll. *Exp.*, ♂ 30, ♀ 34 millim.

1183. **Anarta phæa**, n. sp. (Plate LXXIX. fig. 15.)

Head, thorax, and abdomen dark brown mixed with grey; tarsi ringed with white. Fore wing dark brown suffused with grey and irrorated with white; subbasal line represented by black striæ from costa and median nervure; a slight black streak in base of submedian fold; traces of a waved antemedial line; claviform rather small, defined by black; orbicular and reniform small, whitish, incompletely defined by black, the former round; postmedial line indistinct, incomplete, bent outwards below costa, excurved to vein 4, then strongly incurved; subterminal line represented by whitish points with obscure dentate black marks on their inner side. Hind wing pale brown with a greyish tinge, the cilia white, brown at base; the underside whitish thickly irrorated with brown, a discoidal point and curved postmedial line.

Hab. Arctic America, Victoria Land, Cambridge Bay (*Collinson*), 1 ♂, 1 ♀ type. *Exp.* 34 millim.

1184. Anarta melanopa.

Noctua melanopa, Thunb. Diss. Ent. ii. p. 42 (1791); Herr.-Schäff. Eur. Schmett., Noct ff. 433–4; Staud. Cat. Lep. pal. p. 218; Smith, Cat. Noct. N. Am. p. 292.
Noctua alpicola, Quens. Acerbi's Trav. N. Cape, ii. p. 253, pl. 1. ff. 5, 6 (1802).
Noctua vidua, Hübn. Eur. Schmett., Noct. f. 403 (1827).
Noctua tristis, Hübn. Eur. Schmett., Noct. f. 446 (1827).
Noctua rupestris, Hübn. Eur. Schmett., Noct. ff. 644–5 (1827).
Pyralis rupestralis, Hübn. Schmett. Eur., Pyr. f. 138 (1827).
Anarta nigro-lunata, Pack. Proc. Bost. Soc. N. H. xi. p. 40 (1867).
Anarta wiströmi, Lampa, Ent. Tidskr. 1885, p. 81.

Head and thorax black, clothed with grey and olive-yellow hair; abdomen black, clothed with white hair, the dorsal crests olive-yellow. Fore wing grey, irrorated with dark brown and largely suffused with olive-yellow except on terminal area; a waved black subbasal line from costa to vein 1; antemedial line waved, nearly erect, angled inwards in cell; claviform small, defined by black; orbicular and reniform defined by black, the former small, round or rather irregular, the latter large; traces of a medial shade; postmedial line minutely dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line only defined by a series of dentate dark marks on its inner side and a more prominent patch with pale points on it at costa; a terminal series of black striæ; cilia white intersected with brown. Hind wing white, the inner half suffused with fuscous; a large black-brown discoidal lunule and a broad terminal band with sinuous inner edge; cilia pure white. Underside of fore wing white, with black discoidal lunule and excurved postmedial line; hind wing with the costal and inner

areas slightly irrorated with fuscous, a discoidal lunule and broad terminal band.

Ab. 1. *vistroemi.* Fore wing without grey irroration, the underside with dark terminal band.

Ab. 2. *rupestralis.* Hind wing entirely or almost entirely suffused with fuscous.

Hab. Canada, Labrador, Frey & Grote Colls., 4 ♂, 4 ♀; U.S.A., New Hampshire, Mt. Washington (*Dimmock*), 1 ♂, Colorado, 1 ♂, 1 ♀, Natt Cañon (*Oslar*), 3 ♂, 1 ♀, S. Park, New Mexico, Taos Peak, 2 ♂, Grote Coll.; Britain, Shetland, Leech Coll., Rannock (*Salvage*); Switzerland, Frey Coll.; Italy, Alps; Norway, Bergen, Zeller Coll., Dovrefield, Lapland, Zeller & Frey Colls.; Sweden. *Exp.* 26–30 millim.

Larva. Meyr. Brit. Lep. p. 87; Barrett, Lep. Brit. vi. p. 219, pl. 250. f. 2.

Rosy purple; dorsal line ochreous-brown edged with dark grey and marked with reddish spots; subdorsal line yellowish, black-edged, with series of black marks above and below it; spiracular line pale yellow marked with red. Food-plant, *Vaccinium*. 6–7.

*1185. Anarta mimula.

Anarta mimula, Grote, Trans. Kans. Ac. Sci. viii. p. 48 (1883); Smith, Cat. Noct. N. Am. p. 295.

♂. Head, thorax, and abdomen fuscous black. Fore wing blackish tinged with olive; the lines blackish, interrupted; orbicular a minute annulus; reniform with dark centre and yellowish-white annulus; a white mark in submedian fold before the postmedial line; subterminal line with interrupted white marks; some white points on costa towards apex; cilia intersected with white. Hind wing fuscous with the cilia white, the discoidal spot and band of underside showing through; a terminal series of black points.

Hab. U.S.A., New Mexico. *Exp.* 25 millim. This species is unknown to me.

1186. Anarta mausi. (Plate LXXIX. fig. 16.)

Anarta mausi, Püng. ined.

Head and thorax pale olive-grey; abdomen black clothed with white scales, dorsally tinged with olive. Fore wing pale olive-grey slightly irrorated with fuscous; an indistinct olive-brown subbasal line from costa to submedian fold; a strong waved antemedial line; reniform a small blackish lunule; an indistinct antemedial line angled inwards in submedian fold; a minutely dentate postmedial line excurved from costa to vein 4, then incurved and bent outwards again above inner margin; subterminal line diffused on inner side, interrupted below vein 7, somewhat dentate, angled outwards at vein 7 and excurved at middle; a slightly darker waved olive terminal line; cilia white, with a dark line through them. Hind wing yellowish white; the inner area to middle of cell suffused

with fuscous; a black discoidal lunule; a sinuous subterminal band diffused to termen. Underside nearly pure white; fore wing with black streak in upper part of cell, large irregular discoidal spot, subterminal band angled outwards at vein 7 and excurved at middle, and waved terminal line from apex to above vein 4; hind wing with small discoidal spot and curved postmedial line obsolescent except on costal half.

Hab. E. Turkestan, Altyn Tag Mts., 2 ♀. *Exp.* 24 millim. Type † in Coll. Püngeler.

1187. **Anarta zemblica**, n. sp. (Plate LXXIX. fig 17.)

♀. Head, thorax, and abdomen black with some grey hairs. Fore wing very narrow; fuscous brown with a greyish tinge and rather thinly scaled; traces of a waved subbasal line from costa to submedian fold; traces of a waved antemedial line with a small black spot on it representing the claviform stigma; orbicular represented by a black point, reniform by a small lunule; faint traces of a postmedial line, bent outwards below costa, excurved to vein 4, then incurved; the subterminal line represented by faint traces of dark marks; a terminal series of black points; cilia chequered white and black. Hind wing fuscous brown, the cilia white; the underside with large white dark-irrorated patch extending on costa from near base to near apex and down to vein 2; a black discoidal lunule.

Hab. Novaya Zembla, Schubert Bay, 1 ♀, Grote Coll. *Exp.* 28 millim.

Genus **LASIESTRA**, nov.

Type, *L. phoca.*

Proboscis fully developed; palpi upturned, the 2nd joint clothed with long hair in front, the 3rd moderate; frons smooth; eyes large, rounded, overhung by long cilia; head and thorax clothed with rough hair and without crests; tibiæ fringed with rough hair; abdomen with dorsal crests on basal segments. Fore wing with the termen obliquely curved; veins 3 and 5 from close to angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with vein 3 from close to angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male serrate and fasciculate.

A. Fore wing with the termen and cilia chequered white and black.
  a. Hind wing with the termen white ..... *montana.*
  b. Hind wing with the termen fuscous ..... *subdita.*
B. Fore wing with the termen and cilia not chequered white and black.
  a. Hind wing with the cilia whitish..... *phoca.*
  b. Hind wing with the cilia yellowish.
    a^1. Fore wing with medial shade, the postmedial line dentate ..... *promulsa.*
    b^1. Fore wing without medial shade, the postmedial line not dentate ..... *uniformis.*

1188. Lasiestra montana. (Plate LXXIX. fig. 18.)

Polia montana, Leech, Trans. Ent. Soc. 1900, p. 95.

♂. Head and thorax black mixed with grey and a few orange scales on thorax; tarsi with pale rings; abdomen grey with some black, especially on dorsum. Fore wing black irrorated with bluish grey, especially on basal area; the markings rather deeper black, slightly irrorated with orange scales; an indistinct, double, waved subbasal line from costa to submedian fold; traces of a double, waved antemedial line; claviform moderate, indistinctly defined by black; orbicular and reniform ill-defined, white irrorated with black, the former rounded, the latter with its lower edge indented; traces of a dentate postmedial line bent outwards below costa and oblique below vein 4, some white points on costa beyond it; a subterminal series of black and white lunulate marks slightly angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia chequered white and black. Hind wing white suffused with fuscous, leaving the termen whiter; underside ochreous whitish irrorated with fuscous, a discoidal point and diffused postmedial band.

Hab. W. China, Ta-Chien-lu (*Pratt*), 1 ♂ type. *Exp.* 36 millim.

*1189. Lasiestra subdita. (Plate LXXIX. fig. 19.)

Dianthœcia subdita, Möschl. Wien. ent. Mon. iv. p. 363, pl. 9. f, 7 (1860); Smith, Cat. Noct. N. Am. p. 129; Staud. Cat. Lep. pal. p. 161.

♂. Head and thorax blue-grey mixed with black; tegulæ with strong black medial line; patagia with black line near upper edge; tarsi ringed with white; abdomen grey mixed with fuscous brown. Fore wing blue-grey thickly irrorated with black, the medial area slightly tinged with brown in, below, and beyond cell; subbasal line waved from costa to below cell; a straight black line below base of cell; antemedial line strong, black, much excurved below cell, then angled inwards on vein 1; hardly a trace of the claviform; orbicular and reniform very small, blue-white defined by black, the former round; medial line oblique from costa to lower angle of cell, then incurved and parallel to postmedial line, which is strongly dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line only defined by slight black marks before it towards costa and inner margin, and by the area beyond it being darker, angled outwards at vein 7 and excurved at middle; the termen and cilia chequered black and white. Hind wing dark fuscous brown with a slight white streak on termen towards tornus; cilia white with dark brown marks at base; the underside grey thickly irrorated with fuscous, a discoidal spot and curved postmedial line.

Hab. Canada, Labrador, in Coll. Püngeler. *Exp.* 36 millim.

1190. Lasiestra phoca.

Dianthœcia phoca, Möschl. Wien. ent. Mon. viii. p. 197, pl. 5. f. 15 (1864); Smith, Cat. Noct. N. Am. p. 129; Staud. Cat. Lep. pal. p. 162.

Scotogramma luteola, Smith, Trans. Am. Ent. Soc. xxi. p. 57, pl. 2. f. 10 (1894); Dyar, Cat. Lep. N. Am. p. 159.

Head and thorax clothed with dull brown and grey hairs mixed; tarsi with pale rings; abdomen yellowish brown mixed with grey. Fore wing dull brown thickly irrorated with grey; an indistinct antemedial line oblique from costa to submedian fold, where it is angled; stigmata represented by very obscure grey marks with

Fig. 14.—*Lasiestra phoca*, ♂. ½.

darker marks between them; postmedial line somewhat dentate, excurved from costa to vein 4, inwardly oblique to submedial fold near antemedial line, then excurved; faint traces of a subterminal line angled outwards at vein 7 and inwards at discal and submedian fold; cilia grey with a brown line through them. Hind wing fuscous brown with a greyish tinge; the cilia grey; the underside grey tinged with brown, a slight discoidal lunule and curved postmedial line.

Hab. Canada, Labrador, 1 ♂, Alberta, Calgary (*Wolley-Dod*), 1 ♀, Laggan, 2 ♀. *Exp.* 34 millim.

1191. **Lasiestra promulsa.** (Plate LXXIX. fig. 20.)

Mamestra promulsa, Morr. Ann. Lyc. Nat. Hist. N. Y. xi. p. 97 (1875); Smith, Cat. Noct. N. Am. p. 129.
Scotogramma infuscata, Smith, Journ. N. Y. Ent. Soc. vii. p. 42 (1899); Dyar, Cat. Lep. N. Am. p. 159.

♀. Head and thorax yellowish grey mixed with brown; tarsi banded with black; abdomen ochreous thickly irrorated with brown. Fore wing brownish ochreous thickly irrorated with dark brown; traces of a waved, dark subbasal line from costa to vein 1; an indistinct, waved, dark antemedial line; stigmata absent; a very indistinct diffused medial shade; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line only defined by the dark shade on inner side, angled outwards at vein 7 and excurved at middle; cilia chequered fuscous and ochreous. Hind wing ochreous irrorated with brown, and the terminal area suffused with brown; cilia ochreous, with dark line at base; the underside ochreous irrorated with brown, a dark discoidal point and curved postmedial line.

Hab. U.S.A., Colorado, 1 ♀. *Exp.* 36 millim.

1192. Lasiestra uniformis. (Plate LXXIX. fig. 21.)

Scotogramma uniformis, Smith, Trans. Am. Ent. Soc. xxi. p. 58, pl. ii. f. 12 (1894); Dyar, Cat. Lep. N. Am. p. 159.

Head and thorax dull brown mixed with greenish grey; abdomen brown mixed with grey. Fore wing dull brown tinged with greenish grey; an indistinct waved antemedial line; stigmata very obscurely defined by brown and with rather darker marks between them; postmedial line slightly waved, excurved from costa to vein 4, then incurved and again excurved at vein 1; cilia rather paler, with a dark line through them. Hind wing fuscous brown; cilia yellowish, with a fuscous line through them; the underside grey thickly irrorated with brown, a large discoidal lunule and curved postmedial line.

Hab. Canada, Alberta, Laggan; U.S.A., Colorado, 1 ♂. *Exp.* 40 millim.

Sect. II. Antennæ of male ciliated.

A. Fore wing with the ground-colour bluish or purplish grey.
  a. Fore wing without terminal series of small black spots ..... *dovrensis*.
  b. Fore wing with terminal series of small black spots.
    a^1. Fore wing with the ground-colour blue-grey.
      a^2. Fore wing not tinged with olive ..... *elvesi*.
      b^2. Fore wing tinged with olive ..... *deliciosa*.
    b^1. Fore wing with the ground-colour purplish grey ..... *perplexa*.
B. Fore wing grey tinged with olive-brown ..... *persa*.

1193. Lasiestra dovrensis.

Dianthœcia dovrensis, Staud. Stett. ent. Zeit. 1864, p. 182; id. Cat. Lep. pal. p. 161.
Dianthœcia altaica, Staud. Iris, v. p. 366 (1892).

Head and thorax black-brown mixed with white; tarsi blackish, ringed with white; abdomen brown irrorated with grey. Fore wing black-brown thickly irrorated with grey-white; subbasal line

Fig. 15.—*Lasiestra dovrensis*, ♂. ½.

defined by white on outer side, waved from costa to submedian fold; antemedial line irregularly waved, defined by white on inner side; claviform small, defined by black; orbicular and reniform small, defined by black, the former grey, round or produced to a point on outer side, the latter dark; postmedial line highly dentate, defined by white on outer side, bent outwards below costa, excurved to vein 4, then oblique; subterminal line grey, defined by dentate

black marks on inner side, angled outwards at vein 7 and excurved at middle; cilia chequered white and black. Hind wing black-brown with traces of a whitish postmedial line; the cilia white at tips; the underside white irrorated with brown, a discoidal point, sinuous postmedial line, and terminal shade.

Ab. 1. *altaica*. Rather larger; fore wing with a very slight yellowish tinge, the black marks before subterminal line larger.

Hab. Norway, Saltdalen, Dovrefjeld (*Staudinger*), 1 ♂, 1 ♀, (*Hampson*) 2 ♂, 1 ♀; W. Siberia, Altai, 1 ♂. *Exp.* 34–36 millim.

Subsp. 1. *centeana*.

Dianthœcia kenteana, Staud. Iris, v. p. 366 (1892).
Dianthœcia mongolica, Staud. Iris, ix. p. 257 (1896).

Hind wing white, with broad dark terminal band; underside of both wings with broad dark terminal band.

Ab. 1. *mongolica*. Underside of both wings without terminal band.

Hab. Mongolia, Uliassutai; S.E. Siberia, Kentei, 1 ♀.

1194. Lasiestra elwesi. (Plate LXXIX. fig. 22.)

Hadena elwesi, Hmpsn. Moths Ind. ii. p. 200 (1894).

Head and thorax violaceous grey mixed with black; tegulæ and patagia edged with black; tarsi with white rings; abdomen fuscous brown slightly irrorated with grey. Fore wing violaceous grey, thickly irrorated and in places suffused with black; subbasal line represented by double striæ from costa and cell; antemedial line double, waved; claviform defined by black below and at extremity; orbicular and reniform greyish indistinctly defined by black, the former rather quadrate, open above and below; postmedial line indistinct, dentate, and produced to slight streaks on the veins, slightly bent outwards below costa and oblique below vein 4; subterminal line excurved below costa and at middle and angled inwards in discal and submedian folds; a terminal series of small triangular black spots. Hind wing dark fuscous brown, with very indistinct greyish subterminal line; the underside irrorated with grey, a small discoidal spot and sinuous postmedial line.

Hab. Sikhim Tibet, Yatung (*Hobson*), 1 ♀; Sikhim, 10,000 ft. (*Elwes*), type † in Coll. Elwes; Bhután (*Dudgeon*), 1 ♂. *Exp.* 36 millim.

1195. Lasiestra deliciosa.

Dianthœcia deliciosa, Alph. Hor. Soc. Ent. Ross. xxvi. p. 446 (1892); id. Rom. Mém. ix. p. 18, pl. 3. f. 3; Staud. Cat. Lep. pal. p. 162.

Head and thorax olive-grey mixed with some black; tegulæ whitish, edged with black; tarsi with whitish rings; abdomen olive-grey. Fore wing olive-grey irrorated with fuscous, the markings blackish irrorated with yellowish scales; subbasal line

double, waved, from costa to vein 1; antemedial line double, waved: claviform small, defined by black; orbicular and reniform defined by black, the former round or quadrate, open above and below; a waved medial line; postmedial line double, dentate, and produced to points on the veins, bent outwards below costa and oblique below vein 4; subterminal line excurved below costa and at middle, angled inwards in discal and submedian folds; a terminal series of small triangular black spots; cilia whitish, with a dark line through them. Hind wing dark fuscous, with very indistinct greyish subterminal line; cilia white, with dark line through them; the underside grey irrorated with brown, a dark discoidal spot and sinuous postmedial line.

Hab. Tibet, Kuku-door, 1 ♂, Amdo; Kashmir, Barra Larcha (*MacArthur*), 1 ♂, 2 ♀, Kokser (*MacArthur*), 2 ♂, 2 ♀. *Exp.* 36–38 millim.

*1196. **Lasiestra perplexa.** (Plate LXXIX. fig. 23.)

Scotogramma perplexa, Smith, Pr. U.S. Nat. Mus. x. p. 469 (1887); id. Cat. Noct. N. Am. p. 129.

♀. Head and thorax black, the hairs tipped with bluish grey; tarsi ringed with white; abdomen brownish grey mixed with dark brown. Fore wing purplish grey thickly irrorated with fuscous black; subbasal line black, angled inwards on median nervure, from costa to submedian fold; antemedial line waved, angled inwards on the veins; claviform moderate, defined by black; orbicular and reniform defined by black and with blackish centres, the former round; a distinct, slightly curved medial shade; postmedial line minutely dentate and produced to short streaks on the veins, slightly bent outwards below costa, excurved to vein 4, then incurved, some white points on costa beyond it; subterminal line ill-defined, whitish, defined on inner side by a series of dentate black marks, angled outwards at vein 7 and somewhat dentate at veins 4, 3; a terminal series of small black spots; cilia chequered fuscous and grey. Hind wing fuscous brown; cilia white at tips; the underside brownish white irrorated with dark brown, a discoidal spot and curved postmedial line.

Hab. Canada, British Columbia, in Coll. J. B. Smith; U.S.A., Colorado. *Exp.* 36 millim.

*1197. **Lasiestra persa.** (Plate LXXIX. fig. 24.)

Mamestra persa, Alph. Rom. Mém. ix. p. 212 (1897); Staud. Cat. Lep. p^{al}. p. 156.

♂. Head and thorax clothed with grey and reddish-brown hair; tarsi blackish, with pale rings; abdomen grey-brown, with the dorsal crests dark at tips. Fore wing grey tinged with olive-brown and irrorated with fuscous, the medial area slightly darker; subbasal line represented by double striæ from costa and cell;

antemedial line double, slightly waved, oblique from costa to submedian fold, then angled inwards on vein 1; claviform small, defined by black; orbicular and reniform greyish defined by black, the former round; traces of a waved medial line; postmedial line rather strongly dentate, bent outwards below costa and incurved below vein 4, some pale points beyond it on costa; subterminal line yellowish white, defined on inner side by somewhat dentate dark marks, excurved at vein 7, somewhat dentate at veins 4, 3, and angled inwards in submedian fold; a terminal series of small dark lunules; cilia yellowish, with a dark line through them. Hind wing grey uniformly suffused with brown, the cilia whitish with a brown line near base; the underside pale brownish grey, with traces of a curved postmedial line.

Hab. N. Persia, Demavend, in Coll. Püngeler. *Exp.* 36 millim.

Genus **LASIONYCTA**.

Type.

Lasionycta, Auriv. Ent. Tyd. xviii. p. 285 (1892) ..... *scrælingia*.

Proboscis fully developed: palpi upturned, the 2nd joint clothed with long rough hair; frons smooth; eyes large, rounded, overhung by long cilia; antennæ of male serrate and fasciculate; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; abdomen with dorsal series of crests. Fore wing with veins 5 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with the cell filled in with black between the stigmata.
  a. Fore wing with the medial area darker than the ground-colour.
    a^1. Fore wing with the subterminal line represented by a series of whitish lunules with dentate black marks before them ..... *rainieri*.
    b^1. Fore wing with the subterminal line ill-defined, grey, with obscure dentate dark marks before it ..... *inconcinna*.
  b. Fore wing with the medial area not darker than the ground-colour ..... *conjugata*.
B. Fore wing with the cell not filled in with black between the stigmata.
  a. Fore wing olive-yellow mixed with grey and black..... *bryoptera*.
  b. Fore wing brown suffused with olive-yellow; hind wing yellow..... *lurida*.
  c. Fore wing fuscous irrorated with grey ..... *scrælingia*.
  d. Fore wing with the ground-colour grey.
    a^1. Fore wing with the orbicular grey with brownish centre ..... *subfuscula*.
    b^1. Fore wing with the orbicular whitish ..... *sedilis*.
  e. Fore wing with the ground-colour whitish.
    a^1. Fore wing tinged with bluish ..... *altaica*.
    b^1. Fore wing tinged with yellow in parts.
      a^2. Fore wing with the claviform minute ..... *arietis*.
      b^2. Fore wing with the claviform well-developed ..... *schawerdai*.

*1198. Lasionycta rainieri. (Plate LXXIX. fig. 25.)

Mamestra rainierii, Smith, Pr. U.S. Nat. Mus. xxii. p. 462 (1900); Dyar, Cat. Lep. N. Am. p. 156.

♀. Head and thorax blue-grey mixed with fuscous; tarsi with whitish rings; abdomen fuscous mixed with grey. Fore wing blue-grey overlaying fuscous, the medial area darker; subbasal line waved, from costa to submedian fold; antemedial line oblique, waved; claviform moderate, defined by black and with some grey beyond it; orbicular and reniform grey, defined by black and with some black before and between them in cell, the former irregularly rounded, the latter rather small; postmedial line dentate, bent outwards below costa, excurved to vein 4, then strongly incurved, some pale points beyond it on costa; subterminal line represented by a series of grey lunules, defined on inner side by dentate black marks, angled outwards at vein 7 and excurved at middle. Hind wing grey suffused with fuscous; the underside grey irrorated with fuscous, a small discoidal spot and sinuous postmedial line.

Hab. U.S.A., Washington Terr., Mt. Rainier, in U.S. Nat. Mus. *Exp.* 42 millim.

*1199. Lasionycta inconcinna. (Plate LXXX. fig. 1.)

Scotogramma inconcinna, Smith, Pr. U.S. Nat. Mus. x. p. 469 (1887); id. Cat. Noct. N. Am. p. 130.

♀. Head and thorax blue-grey mixed with fuscous; tegulæ with whitish tips; tarsi ringed with white; abdomen pale brown mixed with fuscous. Fore wing blue-grey thickly irrorated with fuscous; the medial area suffused with black; subbasal line defined by grey on outer side, waved from costa to submedian fold; antemedial line defined by grey on inner side, oblique, waved, angled inwards on the veins; claviform moderate, grey defined by black, acute at extremity; orbicular and reniform large, grey defined by black and with fuscous centres, the former oblique elliptical, the latter with its lower part obscured by black, the cell before and between them filled in with blackish; postmedial line defined by grey on outer side, rather strongly dentate and produced to whitish points on the veins, bent outwards below costa and incurved below vein 4, some white points on costa beyond it; subterminal line indistinct, grey, defined on inner side by obscure somewhat dentate dark marks, angled outwards at vein 7, and somewhat dentate at veins 4, 3; traces of a terminal series of black lunules; cilia brown and grey. Hind wing pale, uniformly suffused with fuscous brown; cilia whitish at tips; underside whitish thickly irrorated with brown, a dark discoidal spot and curved postmedial line.

Hab. Canada, Alberta, Calgary, in Coll. Wolley-Dod; U.S.A., Colorado. *Exp.* 40 millim.

*1200. Lasionycta conjugata. (Plate LXXIX. fig. 26.)

Scotogramma conjugata, Smith, Journ. N.Y. Ent. Soc. vii. p. 41 (1899); Dyar, Cat. Lep. N. Am. p. 159.

♀. Head and thorax grey mixed with fuscous; tegulæ with black medial band; patagia with black line near upper edge; abdomen grey mixed with fuscous. Fore wing bluish white mixed with fuscous; subbasal line black, waved, from costa to submedian fold; antemedial line strong, oblique from costa to submedian fold, then angled inwards on vein 1; claviform defined by black, elongate and extending to postmedial line; orbicular and reniform grey defined by black, the former elongate, acute at extremities and open above and below, the cell between them filled in with black conjoined to some black on costa; postmedial line black, dentate, with an inward curve from costa to vein 7, where it is angled outwards, strongly incurved below vein 4; subterminal line only defined by a dark patch before it on costa, and the area beyond it slightly darker on costal half, angled outwards at vein 7 and dentate at veins 4, 3; an indistinct terminal series of lunules. Hind wing grey suffused with fuscous; the underside whitish thickly irrorated with fuscous, a small discoidal spot and curved postmedial line.

Hab. U.S.A., Colorado, in U.S. Nat. Mus. *Exp.* 40 millim.

*1201. Lasionycta bryoptera. (Plate LXXIX. fig. 27.)

Mamestra bryoptera, Püng. Iris, xii. p. 292, pl. 9. f. 6 (1900); Staud. Cat. Lep. pal. p. 159.

Head and thorax olive-yellow mixed with fuscous and grey; tarsi ringed black and yellow; abdomen ochreous grey mixed with fuscous. Fore wing olive-yellow irrorated with black, the veins streaked with grey; subbasal line double, filled in with grey, waved from costa to submedian fold; antemedial line double filled in with grey, angled outwards below costa, then oblique, slightly waved; claviform with its extremity slightly defined by black; orbicular and reniform moderate, with blackish centres and grey and yellow annuli defined by black at sides only, the former rather quadrate; postmedial line double filled in with grey, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line whitish, slightly defined by blackish suffusion on inner side, somewhat dentate, angled outwards at vein 7, excurved at middle and bent outwards to tornus; a terminal series of black lunules; cilia yellow, with three black lines through them. Hind wing greyish, uniformly suffused with fuscous except the terminal area, which is yellowish; a dark terminal line; cilia yellow, with a dark line through them; the underside yellow thickly irrorated with black, a discoidal spot and sinuous postmedial line.

Hab. Tibet, Kuku-noor, type † in Coll. Püngeler. *Exp.* 38 millim.

*1202. Lasionycta lurida.

Dianthœcia lurida, Alph. Hor. Soc. Ent. Ross. xxvi. p. 446 (1892); id. Rom. Mém. ix. p. 18, pl. 1. f. 4; Staud. Cat. Lep. pal. p. 162.

♂. Head and thorax reddish brown mixed with black and some white; tarsi ringed with yellowish white; abdomen reddish brown, the anal tuft ochreous. Fore wing brown suffused with greenish-yellow scales, especially towards base; subbasal line double filled in with grey, waved, from costa to submedian fold; antemedial line double filled in with grey, oblique, waved; claviform broad, defined by black; orbicular and reniform large, with brown centres and white annuli defined by black, the former round, the latter slightly angled inwards on median nervure; a waved medial line, oblique below cell; postmedial line slightly defined by whitish on outer side, strongly dentate, bent outwards below costa and oblique below vein 4, some white points on costa beyond it; the veins of terminal area with pale streaks; subterminal line whitish, defined on inner side by small dentate black marks, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia brown, with whitish lines through them. Hind wing pale yellow; traces of a sinuous postmedial line and diffused subterminal band, the former more distinct on underside; a fine brown terminal line; the underside with the costal area irrorated with brown, a small discoidal spot.

Hab. Tibet, Kuku-noor, in Coll. Püngeler, Amdo. *Exp.* 36 millim.

1203. Lasionycta scrælingia.

Phlogophora skrælingia, Herr.-Schäff. Eur. Schmett. vi. p. 57, Noct. f. 624 (1845); Auriv. Nord. Fjär. p. 131, f. 26; Staud. Cat. Lep. pal. p. 159.

Head and thorax black-brown mixed with grey; tarsi with pale rings; abdomen black-brown mixed with grey. Fore wing blackish irrorated with grey-white; subbasal line black, angled outwards on median nervure and ending in submedian fold; ante-

Fig. 16.—*Lasionycta scrælingia*, ♂. ½.

medial line slightly defined by whitish on inner side, rather oblique, waved; claviform small, defined by black; orbicular and reniform rather small, with fuscous centres and white annuli defined by black, the former round; traces of a medial line; postmedial line indistinct, slightly defined by whitish on outer side, dentate, bent

outwards below costa, incurved below vein 4 and touching lower edge of reniform, some white points beyond it on costa; subterminal line represented by a series of whitish lunules defined by black marks before and beyond them, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black striæ; cilia chequered white and black. Hind wing fuscous; cilia greyish; the underside grey thickly irrorated with fuscous, a small discoidal spot and curved postmedial line.

Ab. 1. *alpicola*, Bang Haas, ined.

Fore wing with patch of orange scales beyond lower extremity of subbasal line; claviform large and extending to near postmedial line.—Altai.

Hab. Sweden; Lapland; W. Siberia, Altai, 1 ♀. *Exp.* 36 millim.

1204. **Lasionycta subfuscula.** (Plate LXXIX. fig. 28.)

Anarta subfuscula, Grote, Proc. Bost. Soc. N. H. xvi. p. 244 (1873); id. Bull. Buff. Soc. Nat. Sci. ii. pl. 1. f. 7; Smith, Cat. Noct. N. Am. p. 204.

♀. Head and thorax grey mixed with black-brown; tarsi banded with fuscous; abdomen grey irrorated with brown. Fore wing pale violaceous grey thickly irrorated with black-brown; the subbasal line represented by indistinct dark spots below costa and in and below cell; antemedial line defined by grey on inner side, oblique, waved, angled inwards on vein 1; claviform small, defined by blackish; orbicular and reniform moderate, defined by blackish, the former round, the latter with fuscous centre and grey annulus; a diffused medial shade; postmedial line defined by grey on outer side, strongly dentate, and with a series of dark points beyond it on the veins, bent outwards below costa, excurved to vein 4, then strongly incurved, some pale points beyond it on costa; subterminal line formed by a series of strongly dentate brown marks, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing fuscous brown, the cilia pale with a brown line through them; the underside whitish thickly irrorated with brown, a discoidal lunule and curved postmedial line.

Hab. U.S.A., Montana, Oregon, Colorado, 1 ♀ type. *Exp.* 34 millim.

1205. **Lasionycta sedilis.** (Plate LXXIX. fig. 29.)

Scotogramma sedilis, Smith, Journ. N.Y. Ent. Soc. vii. p. 43 (1899); Dyar, Cat. Lep. N. Am. p. 159.

♀. Head and thorax grey mixed with black; antennæ ringed with black; tarsi with pale rings; abdomen brownish grey irrorated with brown. Fore wing grey thickly irrorated with black; traces of a waved subbasal line from costa to submedian fold: antemedial line indistinctly double, waved, angled inwards on vein 1; claviform

indistinctly defined by black, elongate, acute at extremity; orbicular and reniform large, the former prominent, whitish defined by black, the latter defined by black on inner side, very indistinctly on outer, somewhat angled inwards on median nervure; medial shade prominent, black, diffused, occupying most of median area; postmedial line indistinctly double, dentate and produced to black and grey streaks on the veins, bent outwards below costa, incurved at discal fold and below vein 4; subterminal line only defined by a series of dentate black marks on its inner side, angled outwards at vein 7 and excurved at middle, the area beyond it slightly whiter; a terminal series of small black lunules; cilia chequered black and whitish. Hind wing fuscous brown with a slight reddish tinge; cilia white at tips; the underside whitish irrorated with dark brown, a discoidal spot and somewhat dentate sinuous postmedial line.

Hab. U.S.A., Utah, Ogden (*Snyder*), 1 ♀, Colorado. *Exp.* 38 millim.

1206. Lasionycta altaica, n. sp. (Plate LXXIX. fig. 30.)

Polia altaica, Bang Haas, ined. List, 47.

♀. Head and thorax bluish white mixed with black; tegulæ with medial black line; patagia and metathorax edged with black; tarsi banded with black; abdomen grey mixed with fuscous. Fore wing bluish grey-white irrorated with fuscous; subbasal line double, waved, black, from costa to vein 1; antemedial line double, the inner line less distinct, waved, angled inwards on median nervure and vein 1; claviform short, defined by black: orbicular and reniform white defined by black and with fuscous centres, the former round, the latter constricted at middle; an indistinct waved medial line oblique from costa to below cell; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line white, waved, angled outwards at vein 7 and excurved at middle; cilia chequered fuscous and white. Hind wing fuscous; a whitish postmedial line from vein 2 to inner margin; some white on termen towards tornus; cilia white, with a fuscous line through them; the underside whitish irrorated with fuscous, a slight dark streak in base of cell, discoidal lunule, curved postmedial line, and traces of a diffused subterminal band.

Hab. W. Siberia, Altai, 1 ♀, type. *Exp.* 42 millim.

1207. Lasionycta arietis. (Plate LXXIX. fig. 31.)

Mamestra arietis, Grote, Bull. U.S. Geol. & Geog. Surv. Terr. v. p. 207 (1879); Smith, Cat. Noct. N. Am. p. 115.

♂. Head and thorax white slightly mixed with fuscous; palpi and sides of frons blackish; tegulæ with slight blackish medial line; prothoracic crest blackish at base; patagia outlined by black; tarsi with white rings; abdomen white tinged with brown. Fore

wing white suffused with pale purplish fuscous; a slight yellow streak in submedian fold; subbasal line double, black filled in with white, waved, from costa to submedian fold; antemedial line black, prominently defined by white on inner side, irregularly waved and angled inwards on vein 1; claviform small, slightly defined by black; orbicular and reniform moderate, with fuscous centres and white annuli incompletely defined by black; postmedial line black, prominently defined by white on outer side, irregularly dentate, bent outwards below costa, angled inwards in discal fold, incurved below vein 4, and confluent with lower extremity of reniform; subterminal line diffused, white, with series of black points on yellowish marks on it, angled outwards at vein 7, excurved at middle and incurved in submedian fold; a terminal series of black points; cilia chequered white and black. Hind wing white suffused with brown; a sinuous postmedial line defined by whitish on outer side; cilia white, with brownish line through them; the underside white irrorated with pale brown, a dark discoidal point and curved postmedial line.

Hab. U.S.A., California, Mendocino, 2 ♂, type. *Exp.* 36–40 millim.

1208. **Lasionycta ochracea.** (Plate LXXIX. fig. 32.)

Xylomiges ochracea, Riley, Proc. U.S. Nat. Mus. xv. p. 75 (1892); Smith, Cat. Noct. N. Am. p. 234.

♀. Head and thorax grey mixed with pale red-brown; patagia edged with brown; tarsi with black rings; abdomen whitish tinged with brown. Fore wing whitish sparsely irrorated with black; the medial area suffused with brown except on costal and inner areas, leaving the veins whitish; subbasal line black, minutely dentate, curved, from costa to submedian fold, where there is some yellow beyond it; antemedial line black, interrupted, angled outwards below costa, excurved below cell and angled inwards on vein 1; claviform large, with whitish annulus defined by black; orbicular and reniform large, with yellow and whitish annuli defined by black, the former round, the latter extending to well below cell and somewhat angled inwards on median nervure; postmedial line black defined by whitish on outer side, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved; the subterminal line only defined by dentate yellow marks with black scales on them on inner side and the area beyond it brownish, angled outwards on vein 7 and excurved at middle; a terminal series of black lunules; cilia brown intersected with white, and with a dark line through them. Hind wing whitish suffused with brown; a small discoidal spot; postmedial line defined by whitish on outer side and angled inwards in discal fold; a brown terminal line and line through the cilia; the underside white with black discoidal spot and slight curved postmedial line.

Hab. U.S.A., California (*Behr*), 1 ♀. *Exp.* 34 millim.

Genus **POLIA.**

	Type.
Polia, Ochs. Schmett. Eur. iv. p. 73 (1816), non descr.; Treit. Schmett. Eur. v. (2) p. 5 (1825)	*cappa.*
Mamestra, Ochs. Schmett. Eur. iv. p. 76 (1816), non descr.; Treit. Schmett. Eur. v. (2) p. 127 (1825)	*pisi.*
Xanthia, Ochs. Schmett. Eur. iv. p. 82 (1816), non descr.	*lutcago.*
Polymixis, Hübn. Verz. p. 205 (1827)	*filigramma.*
Harmodia, Hübn. Verz. p. 207 (1827)	*compta.*
Melanchra, Hübn. Verz. p. 207 (1827)	*persicariæ.*
Æthria, Hübn. Verz. p. 218 (1827)	*serena.*
Astrapetis, Hübn. Verz. p. 219 (1827)	*dentina.*
Diataraxia, Hübn. Verz. p. 219 (1827)	*splendens.*
Dianthœcia, Boisd. Silberm. Rev. Ent. ii. p. 246 (1834)	*cucubali.*
Hecatera, Guen. Noct. ii. p. 27 (1852)	*dysodea.*
Aplecta, Guen. Noct. ii. p. 74 (1852), nec Guen. 1841, non descr.	*nebulosa.*
Pastona, Wlk. xv. 1754 (1858)	*rudis.*
Maguza, Wlk. xxxiv. 1223 (1865)	*rudis.*
Meterana, Butl. P. Z. S. 1877, p. 385	*pictula.*
Haderonia, Staud. Iris, viii. p. 320 (1895)	*subarschanica.*
Xanthalia, Berg, Ann. Soc. Ent. Belge, xxxviii. p. 395 (1894)	*lutcago.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint fringed with long hair in front, the 3rd short; frons smooth; eyes large, rounded; head and thorax clothed chiefly with scales, the pro- and metathorax with crests; pectus and tibiæ clothed with long hair; abdomen with dorsal series of crests. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle or shortly stalked; 8 anastomosing with the cell near base only.

Sect. I. (*Haderonia*). Antennæ of male bipectinate, with long branches, the apical part serrate.

A. Fore wing black-brown with a reddish tinge ..... *culta.*

B. Fore wing grey-brown.

a. Fore wing with grey annuli to stigmata, a black lunule in submedian fold on inner side of subterminal line... *arschanica.*

b. Fore wing with white annuli to stigmata, a dentate black mark in submedian fold before subterminal line *subarschanica.*

1209. **Polia culta.**

Mamestra culta, Moore, P. Z. S. 1881, p. 347; Hmpsn. Moths Ind. ii. p. 204.

Hadena subviolacea, Leech, Trans. Ent. Soc. 1900, p. 55.

Head and thorax dark red-brown mixed with purplish grey; tegulæ with medial black line; tarsi with pale rings; abdomen dull brown, the anal tuft more ochreous, the ventral surface irrorated with grey. Fore wing dark red-brown thickly irrorated with purple-grey; a double, waved subbasal line from costa to vein 1, prominently black and filled in with yellow scales below the cell; antemedial line double, oblique, waved, angled inwards on vein 1; claviform small, defined by black at extremity and below

and with some yellow scales in it; orbicular and reniform large, defined by brown, the former oblique, elliptical, the latter with some black and yellow in its lower extremity; an indistinct medial line, excurved to vein 2, then incurved; postmedial line indistinct, double, highly dentate, bent outwards below costa and strongly incurved below vein 4; subterminal line grey, with patches of yellow scales on small dentate black marks, angled outwards at vein 7 and excurved at middle; a terminal series of black lunules.

Fig. 17.—*Polia cultu*, ♂. ½.

Hind wing fuscous brown, with traces of a pale subterminal line towards tornus; a fine pale line at base of cilia; termen of both wings crenulate; the underside greyish thickly irrorated with brown, a discoidal lunule and sinuous postmedial line.

Ab. 1. *subviolacea*: with most of the patches of yellow scales absent.

Hab. W. China, Omeishan, 1 ♂ type *subviolacea*, Pu-tsu-fang, 2 ♂, 1 ♀; Kashmir, Goorais Valley (*Leech*), 1 ♀; Punjab, Dalhousie, 1 ♀ type; Sikhim Tibet, Yatong (*Bingham, Hobson*), 2 ♂, 4 ♀. *Exp.* 46–56 millim.

1210. **Polia arschanica.** (Plate LXXX. fig. 2.)

Hadena arschanica, Alph. Hor. Soc. Ent. Ross, xvii. p. 78, pl. 2. f. 45 (1882); Staud. Cat. Lep. pal. p. 161.

♂. Head and thorax brownish grey mixed with fuscous; tegulæ with dark medial line; patagia with blackish patch with some white on it; tarsi with pale rings; abdomen brownish grey. Fore wing grey brown with slight dark irroration; subbasal line defined by grey on outer side, waved from costa to submedian fold; antemedial line double filled in with grey, slightly waved, and angled inwards on vein 1; claviform small, defined by black; orbicular and reniform large, grey defined by black, the former oblique oblong, the latter with its centre defined by fuscous, a browner shade in the cell before and between them; traces of a waved medial line; postmedial line somewhat dentate and produced to black and white points on the veins, bent outwards below costa and incurved below vein 4, some grey points beyond it on costa; subterminal

line grey, defined on inner side by blackish brown, becoming slight dentate marks at middle and a more prominent patch at submedian fold, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black lunules. Hind wing fuscous brown; cilia ochreous, with dark medial line and whitish tips; the underside grey irrorated with fuscous, a small discoidal spot and rather diffused postmedial line with darker streaks at the veins.

♀. Fore wing more uniform grey, with the dark markings reduced.

Hab. W. Turkestan, Turcomania, 1 ♂, Issyk-kul, Ferghana; E. Turkestan, Kuldja, 3 ♂, 1 ♀. *Exp.* 38 millim.

1211. Polia subarschanica. (Plate LXXX. fig. 3.)

Hadena subarschanica, Staud. Iris, viii. p. 320, pl. 6. f. 12 (1895); id. Cat. Lep. pal. p. 161.

♂. Head and thorax dark brown mixed with whitish grey; tegulæ with dark medial line; patagia with whitish patch; tarsi with white rings; abdomen brownish grey. Fore wing brownish grey; a diffused, double, waved subbasal line filled in with white, from costa to submedian fold, a yellowish and black mark below it on inner margin; a double, waved antemedial line angled inwards on vein 1; claviform small, defined by black; orbicular and reniform moderate, with whitish annuli defined by black and their centres with fuscous, the former oblique elliptical, the latter rather narrow; an indistinct waved medial line; postmedial line double, somewhat dentate and produced to whitish points on the veins, bent outwards below costa, slightly incurved at discal fold and strongly below vein 4, some white points beyond it on costa; subterminal line white, lunulate, defined on inner side by small dentate black marks, two below costa and one in submedian fold larger, slightly angled outwards at vein 7 and excurved at middle; a terminal series of minute black lunules. Hind wing fuscous brown, with traces of a waved whitish subterminal line; cilia whitish, with fuscous line through them; the underside whitish, the costal area irrorated with brown, a small discoidal spot and indistinct curved postmedial line.

Hab. Tibet, Kuku-noor, 1 ♂, Amdo. *Exp.* 36 millim.

Sect. II. Antennæ of male bipectinate, with short branches, the apical part serrate.

A. Hind wing white, the terminal area tinged with fuscous ..... *parvula.*
B. Hind wing wholly tinged with fuscous.
  a. Fore wing with the middle area tinged with rufous.
    a^1. Fore wing without black on inner side of the white mark on subterminal line in submedian fold ..... *cervina.*
    b^1. Fore wing with the white mark on subterminal line in submedian fold defined by black on inner side ..... *lustralis.*
  b. Fore wing with the medial area not tinged with rufous ..... *navia.*

1212. Polia parvula. (Plate LXXX. fig. 4.)

Mamestra parvula, Herr.-Schäff. Corresp.-Blatt zool.-min. Ver. Regensb. 1868, p. 118.
Mamestra distributa, Möschl. Abh. Senck. Ges. xiv. p. 46 (1886).

♂. Head and thorax grey strongly tinged with rufous; palpi black above towards base; vertex of head and tips of tegulæ tinged with green; tegulæ with slight medial line: patagia with black line near upper edge; tarsi banded with black; abdomen pale purplish fuscous, the anal tuft rufous, the ventral surface whitish. Fore wing greyish suffused with rufous, strongly to postmedial line, a slight greenish tinge at base; a fine waved subbasal line from costa to submedian fold; a black antemedial line excurved below the cell, angled outwards below costa and above inner margin and inwards in cell and on vein 1; claviform defined by black, sometimes filled in with black, and reaching to or near postmedial line; orbicular and reniform large, with rufous centres and paler annuli defined by black, the former round or slightly produced on outer side, the latter rounded; medial line represented by a striga from costa; postmedial line angled inwards below costa, then bent outwards, dentate at veins 6 and 5, then strongly incurved, the veins beyond it streaked with black, some pale points on costa; subterminal line indistinct, whitish, defined on inner side by a series of small dentate rufous marks, angled outwards at vein 7 and excurved at middle; a terminal series of small rufous lunules. Hind wing white, the veins and marginal areas suffused with fuscous brown; the cilia white, with a fuscous line through them; the underside with the costal and terminal areas slightly irrorated with brown.

♀. More purplish grey and less rufous.

Hab. Jamaica (*Kaye*), 1 ♀; Cuba, Santiago (*Schaus*), 4 ♂, 2 ♀.
Exp. 30–32 millim.

1213. Polia cervina.

Mamestra cervina, Smith, Ent. News. Philad. 1898, p. 247; Dyar, Cat. Lep. N. Am. p. 156.

♂. Head and thorax reddish brown mixed with white; palpi blackish at sides; tegulæ with blackish medial line; abdomen grey and brown. Fore wing blue-grey slightly tinged with brown; a few black scales below base of cell; subbasal line represented by an obscure dark mark on costa; antemedial line indistinct, double, waved; claviform represented by a slight black streak on a pink fascia extending to postmedial line; orbicular and reniform moderate, with brown centres and whitish annuli defined by black, the former rounded, some pink between and beyond them; traces of a waved medial line oblique from costa to below cell; postmedial line dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line grey, with white spot in

submedian fold and sometimes some pink scales on its medial part, defined on inner side by a dark patch on costa and on outer by some small black spots; the veins of terminal area slightly streaked with black, a terminal series of black striæ; cilia dark brown and

Fig. 18.—*Polia cervina*, ♂. ½.

grey. Hind wing fuscous brown, whitish towards inner margin; cilia white, with a brown line through them; the underside whitish irrorated with dark brown, a slight discoidal spot and sinuous post-medial line.

Hab. Canada, Calgary (*Wolley-Dod*), 3 ♂. *Exp.* 32 millim.

1214. Polia lustralis. (Plate LXXX. fig. 5.)

Dianthœcia lustralis, Grote, Can. Ent. vii. p. 223 (1875); Smith, Cat. Noct. N. Am. p. 115.

Tæniocampa suffusa, Smith, Proc. U.S. Nat. Mus. x. p. 474 (1887); Smith, Cat. Noct. N. Am. p. 203.

Head and thorax red-brown mixed with bluish white; tarsi with white rings; abdomen pale reddish brown. Fore wing red-brown, suffused and irrorated with bluish white except on disk, the submedian fold rufous on medial area; traces of a waved subbasal line from costa to vein 1, defined by white on outer side; antemedial line oblique, waved, angled inwards in cell and on vein 1, defined by white on inner side; claviform small, slightly defined by brown; orbicular and reniform rather small, bluish white defined by brown and with a few brown scales at centre, the former round; post-medial line minutely dentate, defined by white on outer side, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line bluish white, defined by brown beyond it in discal fold and on both sides in submedian fold, angled outwards at vein 7 and excurved at middle; a terminal series of dark striæ; cilia grey, with a dark line through them. Hind wing brown, yellowish towards base; cilia pale, with a brown line through them; the underside white, irrorated with brown on costal and terminal areas, a discoidal point and slightly curved postmedial line.

Hab. Canada; U.S.A., Eastern States to Virginia, 2 ♂, New York, Adirondacks, Wisconsin, 1 ♀ type, Colorado. *Exp.* 36 millim.

*1215. Polia nævia. (Plate LXXX. fig. 5.)

Mamestra nævia, Smith, Ent. News Philad. ix. p. 248 (1898); Dyar, Cat. Lep. N. Am. p. 156.

♂. Dirty grey suffused with fuscous; head blackish; tegulæ yellowish grey at base and with medial black line; patagia with black line near edges. Fore wing with the subbasal line double, ending at the short black streak below base of cell; antemedial line indistinct, double filled in with grey, excurved; claviform small, defined by black; orbicular large, with whitish annulus defined by black, oblique elliptical, and touching antemedial line; reniform large and touching postmedial line above and below, ill-defined; medial shade only visible at costa; postmedial line double filled in with grey, the inner line minutely waved, the outer even, bent outwards below costa, excurved to vein 4, then incurved and angled outwards on vein 1; subterminal line pale, defined on each side by blackish, most prominently towards inner margin, angled outwards at vein 7, slightly excurved at middle, and angled inwards at submedian fold; a terminal series of black striæ; cilia chequered fuscous and whitish. Hind wing fuscous, with darker terminal line; cilia whitish at base; the underside grey with dark irroration, a discoidal spot and waved postmedial line.

Hab. U.S.A., Colorado. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

Sect. III. Antennæ of male with very short fasciculate branches ending in a bristle, the apical part serrate.

A. Fore wing with the claviform filled in with black, no distinct pale fascia from it to termen ..... *detracta.*
B. Fore wing with the claviform not filled in with black, a distinct pale fascia from it to termen ..... *neoterica.*

1216. Polia detracta. (Plate LXXX. fig. 6.)

Hadena detracta, Wlk. xi. 752 (1857); Smith, Cat. Noct. N. Am. p. 116.
Mamestra claviplena, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 194 (1873).

♂. Head and thorax dark red-brown mixed with grey; tegulæ with black medial line; patagia black at tips; tarsi with pale rings; abdomen brown, the dorsal crests black at tips, the ventral surface irrorated with grey. Fore wing dark brown suffused with grey; a black streak below base of cell; a double, waved subbasal line from costa to submedian fold filled in with grey; antemedial line defined by grey on inner side, waved, angled outwards below costa and inwards in cell and on vein 1; claviform moderate, filled in with black; orbicular and reniform grey defined by black and their centres by brown, the former oblique elliptical; postmedial line double filled in with grey, dentate, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on

costa; subterminal line grey, defined on each side by some black scales, angled outwards at vein 7 and excurved at middle; the veins of terminal area with slight dark streaks; a terminal series of black striæ; cilia brown and grey. Hind wing fuscous brown; the underside pale irrorated with dark brown, a discoidal point and sinuous postmedial line.

♀. Darker and much less suffused with grey.

Hab. Canada; U.S.A., Massachusetts, New York, Trenton Falls (*Doubleday*), 1 ♂ type, Evans Centre (*Grote*), 2 ♂, 1 ♀, type *claviplena*, New Jersey, Wisconsin, Virginia, New Mexico. *Exp.* 34 millim.

Larva. Head brown, with dark brown reticulations and curved vertical bands. Body narrower in front, joint 12 enlarged. Reddish brown, finely marbled on a luteous ground. Dorsal and subdorsal lines pale, narrow, obscured. Cervical shield shining brownish black, cut by dorsal and subdorsal distinct pale-yellow lines, the part of the shield below the subdorsal line luteous. Spiracles black; feet of the colour of body.—H. G. D.

1217. Polia neoterica.

Mamestra neoterica, Smith, Ent. News Philad. 1898, p. 244; Dyar, Cat. Lep. N. Am. p. 156.

♂. Head and thorax black-brown mixed with white; tegulæ with blackish medial line; tarsi with white rings; abdomen dark brown mixed with grey. Fore wing grey thickly irrorated with black-brown; a rather ill-defined black streak below base of cell; an indistinct waved black subbasal line from costa to submedian fold, defined by grey on outer side; antemedial line indistinct, oblique, waved, defined by grey on inner side; claviform moderate, rather indistinctly defined by black, and with a brownish-white fascia from it to subterminal line; orbicular and reniform with

Fig. 19.—*Polia neoterica*, ♂. ½.

brown centres and grey annuli defined by black, the former oblique elliptical, open above, the latter sometimes with ill-defined pale fascia beyond it; postmedial line rather indistinct, crenulate, and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line grey, defined on inner side by very indistinct black

marks and by a dark patch on costa, angled outwards at vein 7 and excurved at middle, the area beyond it somewhat darker; a terminal series of black points; cilia chequered brown and grey. Hind wing fuscous brown; cilia pale at tips; the underside grey irrorated with brown, an indistinct discoidal point and sinuous postmedial line.

Hab. Canada, Calgary (*Wolley-Dod*), 3 ♂. *Exp.* 32 millim.

Sect. IV. Antennæ of male serrate and fasciculate.

A. Prothorax with divided crest.
  a. Fore wing grey-white irrorated with fuscous ..... *discalis*.
  b. Fore wing more or less strongly tinged with brown.
    a^1. Fore wing whitish suffused and irrorated with brown..... *imbrifera*.
    b^1. Fore wing purplish-grey suffused and irrorated with brown.
      a^2. Hind wing white, the veins tinged with brown.
        a^3. Fore wing with the reniform angled inwards on median nervure ..... *nugalis*.
        b^3. Fore wing with the reniform not angled inwards on median nervure ..... *languida*.
      b^2. Hind wing entirely tinged with brown.
        a^3. Fore wing with the reniform angled inwards on median nervure..... *juncimacula*.
        b^3. Fore wing with the reniform not angled inwards on median nervure ..... *purpurissata*.
    c^1. Fore wing grey-brown ..... *crotchi*.

1218. **Polia discalis.** (Plate LXXX. fig. 7.)

Mamestra discalis, Grote, U.S. Bull. Geol. & Geog. Surv. Terr. iii. p. 797 (1877); Smith, Cat. Noct. N. Am. p. 114.

Bluish white; head, thorax, and abdomen with black mixed; tegulæ with blackish medial line; patagia tipped with blackish. Fore wing thickly irrorated with black; a double dentate subbasal line from costa to vein 1; an antemedial line defined by white on inner side and angled inwards on median nervure and vein 1; claviform small, defined by black or absent; orbicular and reniform large, defined by blackish and with blackish suffusion between them, the former round or elliptical, the latter constricted at middle and extending to below cell; postmedial line indistinct, minutely dentate, bent outwards below costa and incurved below vein 3; subterminal line represented by a series of whitish lunules with small dentate dark marks before them, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing white, slightly irrorated with fuscous especially towards termen; the veins brownish; a fine dark terminal line; the underside with postmedial series of points on the veins.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 1 ♀, Br. Columbia, Sicamon's Junction (*Miss Ricardo*), 2 ♀; U.S.A., Colorado, Clear Creak Cañon, 1 ♀ type, (*Bruce*) 1 ♀, Grand Junction (*Oslar*), 3 ♂,

2 ♀, New Mexico, Albuquerque (*Oslar*), 1 ♂, 2 ♀. *Exp.* 58 millim.

Larva (Original).—Head shining brown with dark brown reticulations, the upper vertical band broad. Body cylindrical, uniform, dull brown, indefinitely shaded with blackish; a broad diffuse dorsal band, faintly widened into quadrate patches on the segments, containing a broken yellowish-white dorsal line; a narrow transverse dusky bar on joint 12. Blackish oblique stripes extend upward and backward from the spiracles, ill-defined. No shields.

A general feeder, adapted for concealment on the ground.—H. G. D.

1219. **Polia imbrifera.** (Plate LXXX. fig. 8.)

Aplecta imbrifera, Guen. Noct. ii. p. 76 (1852); Smith, Cat. Noct. N. Am. p. 114.

Head and thorax dark brown mixed with grey; tegulæ with black medial line; patagia with whitish patches; tarsi banded with black; abdomen brown mixed with grey. Fore wing grey, largely or almost entirely suffused with brown and irrorated with black; a double black subbasal line, interrupted at cell and connected with base by a slight streak above vein 1; antemedial line defined by whitish on inner side, oblique, waved, angled inwards on median nervure and vein 1; claviform short, broad, defined by black; orbicular and reniform large, with brownish centres and whitish annuli defined by black, the former round; an indistinct medial line oblique from costa to median nervure, then dentate; postmedial line double filled in with whitish, dentate, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; postmedial area whitish towards subterminal line, which is whitish defined on inner side by an irregular series of dentate dark marks, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of black lunules. Hind wing whitish suffused with dark brown especially on terminal area; the somewhat dentate postmedial line defined by pale colour on outer side; cilia pale; the underside paler, with dark discoidal lunule, curved postmedial line, and diffused subterminal band.

Hab. Canada; U.S.A., N.E. and Middle States, New York, Trenton Falls (*Doubleday*), 2 ♂, 1 ♀, type, Evans Centre, 2 ♂, 2 ♀, Colorado. *Exp.* 54 millim.

*1220. **Polia nugatis.** (Plate LXXX. fig. 9.)

Mamestra nugatis, Smith, Ent. News Philad. ix. p. 240 (1898); Dyar, Cat. Lep. N. Am. p. 156.

♀. Head and thorax purplish grey mixed with dark brown; tegulæ with medial black line; patagia with some black scales near upper edge; abdomen ochreous, whitish at base, greyish at extremity. Fore wing purplish grey irrorated with fuscous, some

ochreous white in submedian fold from base to claviform and in discal fold from reniform to near subterminal line; a black streak below base of cell; subbasal line obsolete; antemedial line indistinct, waved, strongly angled outwards in submedian fold and above inner margin, and inwards on vein 1; claviform elongate, defined by black; orbicular and reniform defined by black, the former oblique elliptical, the latter emitting a long spur inwards on median nervure to below former; a diffused blackish fascia in and below lower end of cell from lower angle to subterminal line; a whitish streak from claviform to subterminal line and slight streaks above veins 2 and 3; postmedial line only traceable at costa and towards inner margin, where it is dentate; subterminal line white, defined by fuscous brown marks on inner side, angled outwards at vein 7, to termen at veins 4, 3, and inwards in discal and subterminal folds; a terminal series of black lunules; a fine whitish line at base of cilia. Hind wing white, the veins tinged with brown; a fine dark terminal line; the underside with the costal area irrorated with brown.

Hab. U.S.A., Nebraska, Montana, Colorado, in U.S. Nat. Mus. *Exp.* 46 millim.

1221. **Polia languida.** (Plate LXXXVI. fig. 6.)

Mamestra languida, Smith, Trans. Am. Ent. Soc. xxi. p. 54, pl. ii. f. 6 (1894); Dyar, Cat. Lep. N. Am. p. 155.

Head and thorax purple-grey with some blackish irroration; frons with black band; tegulæ tipped with white; abdomen pale brownish grey. Fore wing purple-grey irrorated with fuscous; a dark shade on costal area and in cell to postmedial line, becoming bright rufous beyond the cell; subbasal and antemedial lines represented by blackish points on costa; claviform very small, slightly defined by black; orbicular and reniform large, with rather pale centres defined by black, the former round; postmedial line double, minutely dentate, bent outwards below costa and oblique below vein 4; subterminal line yellowish white, defined on inner side by somewhat dentate black marks from below costa to vein 5 and towards inner margin, angled outwards at vein 7 and strongly dentate at veins 4, 3; a terminal series of black points; a fine pale line at base of cilia. Hind wing white, the veins and terminal area tinged with brown; a dark terminal line; cilia whitish; the underside white irrorated with black.

Hab. U.S.A., Colorado, Durango (*Oslar*), 1 ♂, 1 ♀. *Exp.* 37 millim.

1222. **Polia juncimacula.** (Plate LXXX. fig. 10.)

Mamestra juncimacula, Smith, Bull. Brooklyn Ent. Soc. v. p. 67 (1882); Dyar, Cat. Lep. N. Am. p. 151.

Head and thorax dark brown mixed with grey; tegulæ with medial black line; patagia with some black scales near upper edge;

abdomen ochreous mixed with red-brown. Fore wing purplish grey suffused and irrorated with dark brown, and with some rufous at base of costa and inner margin, in submedian fold, and in discal fold from middle of cell to near subterminal line; a slight black streak at base of vein 1 followed by others on subcostal and median nervures and in submedian fold; antemedial line indistinct, grey, strongly angled outwards below costa and in submedian fold, inwards on subcostal and median nervures and vein 1; claviform small, slightly defined by black; orbicular and reniform defined by brown, the former irregularly oblique elliptical, with dark point at centre, the latter a large narrow lunule, with brown line at centre and with its lower edge angled inwards on median nervure to the orbicular; postmedial line very indistinct, dentate, with darker points at the veins, bent outwards below costa, excurved to vein 4, then oblique; some white points beyond it on costa; subterminal line white defined on inner side by rufous, with irregular rather dentate black marks, longest below veins 5 and 2, the line angled outwards at vein 7 and dentate to termen at veins 4, 3; a terminal series of black lunules. Hind wing white, with traces of diffused subterminal band or wholly suffused and irrorated with brown; the underside with the costal and terminal areas irrorated with brown.

Hab. U.S.A., Colorado (*Bruce*), 1 ♀, Durango (*Oslar*), 1 ♂. *Exp.* 54 millim.

1223. Polia purpurissata.

Eurois purpurissata, Grote, Proc. Ent. Soc. Phil. iii. p. 82, pl. 1. f. 5 (1864); Smith, Cat. Noct. N. Am. p. 114.
Mamestra crydina, Dyar, Can. Ent. 1904, p. 32.

Head and thorax purplish grey mixed with dark brown; frons with two black bars; tegulæ with black medial line; tarsi banded with black; abdomen grey tinged with red-brown. Fore wing purplish grey irrorated with brown, and suffused with dark brown

Fig. 20.—*Polia purpurissata*, ♂. ½.

on costal area and in cell; an indistinct pale subbasal line interrupted at cell and ending at vein 1; antemedial line double filled in with grey, waved, oblique from costa to submedian fold where it is angled, then angled inwards on vein 1 and outwards

above inner margin ; traces of a small claviform defined by rufous ; orbicular and reniform defined by black, the former moderate, round, often with dark point in centre, the latter large, with its centre defined by fuscous and with some rufous beyond it ; an indistinct medial line oblique from costa to median nervure, then incurved ; postmedial line double, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved ; subterminal line grey, defined on inner side by somewhat dentate dark reddish-brown marks, angled outwards at vein 7 and dentate at veins 4 and 3 ; a terminal series of small black lunules. Hind wing reddish brown, darker towards termen ; cilia white ; the underside whitish irrorated with brown, a dark discoidal point, punctiform postmedial line, and diffused subterminal band.

Hab. Canada, Renfrew Co., 6 ♂, 3 ♀, Alberta, Calgary (*Wolley-Dod*), 1 ♂, Br. Columbia, Kaslo ; U.S.A., N.E. and Middle States, Massachusetts, Buffalo, 1 ♂, New York (*Hill*), 1 ♀, Utah. *Exp.* 44–58 milim.

Larva (Original).—Head light brown, the usual darker reticulations ill-defined but large and confluent. Body cylindrical, uniform, dull brown, the markings faint and nearly obsolete. Cervical shield and anal plate darker, not chitinized. Dorsal and lateral darker geminate lines, and a broad pale substigmatal band with darker edges, are very faintly traceable. Spiracles black. A general feeder on low plants.—H. G. D.

1224. Polia crotchi. (Plate LXXX. fig. 11.)

Mamestra crotchii, Grote, Bull. Brooklyn Ent. Soc. iii. p. 29 (1880) ; Smith, Cat. Noct. N. Am. p. 116.
Mamestra fusculenta, Smith, Proc. U.S. Nat. Mus. xiv. p. 213 (1891).

Head and thorax dark brown mixed with grey ; tegulæ with medial black line ; patagia with some black scales above ; abdomen grey mixed with reddish brown, the dorsal crests large. Fore wing grey suffused with brown ; a slight black streak below base of cell ; a subbasal black streak above inner margin ; antemedial line obsolete ; claviform defined by black, very elongate and pointed at extremity, its lower edge running back towards base and downcurved ; orbicular and reniform large, incompletely defined by black, the former elongate elliptical, open towards base or outer side or both, the latter angled inwards on median nervure and dilated below the cell, sometimes connected with former ; traces of a minutely dentate postmedial line, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa ; subterminal line grey, angled outwards at vein 7 and dentate on veins 4, 3, 1, defined by dentate black marks on inner side at middle and by the area beyond it being darker except at apex ; the veins streaked with black towards termen ; a terminal series of black lunules ; cilia brown intersected with white. Hind wing fuscous brown, the interspaces of basal two-thirds paler ; cilia white

mixed with brown; the underside white irrorated with brown, a dark discoidal lunule.

Ab. 1. *fusculenta*: darker.

Hab. U.S.A., Oregon (*Crotch*), 2 ♂, 1 ♀, type, Colorado, 1 ♂, Glenwood Springs (*Oslar*), 2 ♂, 2 ♀, California. *Exp.*, ♂ 38, ♀ 42 millim.

B. Prothorax with spreading crest.
- *a*. Fore wing with black streak below base of cell.
  - a^1. Fore wing with the postmedial line touching the lower end of reniform.
    - a^2. Fore wing with the claviform large and elongate ... *proxima.*
    - b^2. Fore wing with the claviform short and broad ..... *griseata.*
  - b^1. Fore wing with the postmedial line separate from the reniform ..... *orientalis.*
- *b*. Fore wing without black streak below base of cell.
  - a^1. Fore wing with the postmedial line incurved below vein 6 ..... *oriza.*
  - b^1. Fore wing with the postmedial line incurved below vein 5.
    - a^2. Fore wing with the antemedial line straight in submedian interspace, the reniform angled inwards on median nervure ..... *rubens.*
    - b^2. Fore wing with the antemedial line excurved in submedian interspace, the reniform not angled inwards on median nervure ..... *lepidula.*
  - c^1. Fore wing with the postmedial line incurved or oblique below vein 4.
    - a^2. Fore wing with the antemedial line obliquely curved. *distincta.*
    - b^2. Fore wing with the antemedial line waved.
      - a^3. Fore wing with more or less distinct pale dentate patch beyond the claviform.
        - a^4. Fore wing with distinct white patch on inner area beyond the postmedial line ..... *literata.*
        - b^4. Fore wing without distinct white patch on inner area beyond the postmedial line..... ..... *luteago.*
      - b^3. Fore wing without pale dentate patch beyond the claviform.
        - a^4. Fore wing with the ground-colour pale ochreous brown.
          - a^5. Fore wing not suffused with fuscous, the markings indistinct ..... *canities.*
          - b^5. Fore wing suffused with fuscous, the markings black ..... *discolor.*
        - b^4. Fore wing with the ground-colour rufous or pale reddish brown.
          - a^5. Fore wing with the terminal area darker than the ground-colour.
            - a^6. Fore wing with the reniform concave on inner side ..... *determinata.*
            - b^6. Fore wing with the reniform convex on inner side.
              - a^7. Fore wing pale rufous ..... *columbia.*
              - b^7. Fore wing rufous tinged with dark brown..... *meditata.*
          - b^5. Fore wing with the medial area paler than the ground-colour.
            - a^6. Hind wing wholly suffused with fuscous... *leucogramma.*
            - a^6. Hind wing whitish suffused with reddish brown ..... *mohosa.*

c^4. Fore wing with the ground-colour dark grey.
  a^5. Fore wing tinged with purple.
    a^6. Fore wing with white spot on reniform ... *orisabena.*
    b^6. Fore wing without white spot on reniform.
      a^7. Fore wing without red suffusion in discal and submedian folds, reniform convex on inner side ..... *brachiola.*
      b^7. Fore wing with red suffusion in discal and submedian folds, reniform concave on inner side ..... *rubrifusa.*
  b^5. Fore wing not tinged with purple.
    a^6. Fore wing with the reniform angled inwards on median nervure ..... *umbrosa.*
    b^6. Fore wing with the reniform not angled inwards on median nervure.
      a^7. Fore wing with the terminal area not paler than the ground-colour.
        a^8. Fore wing without pale patch on inner area before subterminal line ..... *plicata.*
        b^8. Fore wing with pale patch on inner area before subterminal line ..... *gnata.*
      b^7. Fore wing with the terminal area paler than the ground-colour..... *selama.*
d^4. Fore wing with the ground-colour olive-brown..... *tenebra.*
e^4. Fore wing with the ground-colour pale grey or whitish.
  a^5. Fore wing with the orbicular minute, indistinct ..... *pusilla.*
  b^5. Fore wing with the orbicular large.
    a^6. Fore wing with white points on lower extremity of reniform.
      a^7. Fore wing with hardly any ochreous tinge, and with distinct dentate fuscous marks before subterminal line..... *serratilinea.*
      b^7. Fore wing with distinct ochreous tinge, the dentate marks before subterminal line indistinct; size larger ..... *spalax.*
    b^6. Fore wing without white points on lower extremity of reniform ..... *insolens.*

1225. Polia proxima.

Noctua proxima, Hübn. Eur. Schmett., Noct. f. 409 (1827); Dup. Lép. Fr. vi. p. 264, pl. 89. f. 5; Staud. Cat. Lep. pal. p. 161.
Hadena cana, Ev. Bull. Mosc. Soc. 1841, i. p. 29, pl. 3. ff. 7, 8; Herr.-Schäff. Eur. Schmett., Noct. f. 82.
Hadena ochrostigma, Ev. Bull. Mosc. Soc. 1842, iii. p. 545; Herr.-Schäff. Eur. Schmett., Noct. ff. 165, 166.
Noctua extensa, Ev. Faun. Volg.-Ur. p. 231 (1844).

Head and thorax blue-grey mixed with black-brown; tegulæ with medial blackish line; patagia edged with black; tarsi with whitish rings; abdomen whitish thickly irrorated with dark brown or dorsally suffused with fuscous. Fore wing blue-grey irrorated with brown; a sinuous black streak below base of cell; subbasal line double, filled in with blue-grey, waved from costa to submedian fold; antemedial line double, excurved in interspaces, bent inwards in cell and angled inwards on vein 1; claviform defined

by black, large and extending to postmedial line; orbicular and reniform with fuscous centres and whitish annuli defined by black, open above, the former oblique elliptical, the latter large; a waved medial shade; postmedial line double, bent outwards below costa, inwardly oblique below vein 6 and touching reniform and claviform, slightly angled outwards on vein 1, the veins beyond it streaked with black and with a series of white points on them; subterminal line grey, slightly defined on each side by brown, with a more prominent patch with white points on it on inner side at costa, angled outwards at vein 7, excurved and slightly waved at middle; a terminal series of small black lunules; cilia brown intersected with white. Hind wing reddish brown, with fine dark terminal line; cilia pale brown, white at tips; the underside white, the costal and terminal areas irrorated with brown, a small discoidal spot and slightly waved postmedial line.

Ab. 1. *ochrostigma.* Fore wing with slight fulvous spots beyond claviform and reniform.

Ab. 2. *extensa.* Fore wing with the medial area suffused with black.

Ab. 3. *cana.* More uniform brownish grey, the markings less distinct.

Ab. 4. *uniformis.* Fore wing obscure grey, almost uniform in colour.—Ulliassutai.

Hab. Germany, Silesia, Bohemia, Saxony; Switzerland, Valais, Zeller & Frey Colls.; Scandinavia, Lapland, Leech Coll.; Russia, Finland, Leech Coll., Urals, Sarepta, Zeller Coll.; Armenia; W. Turkestan, Issyk-kul, Tarbagatai; W. Siberia, Altai; E. Turkestan, Ili; E. Siberia, Amurland. *Exp.* 32–40 millim.

*1226. **Polia griseata.** (Plate LXXXVI. fig. 7.)

Mamestra griseata, Smith, Proc. U.S. Nat. Mus. xxii. p. 467 (1900); Dyar, Cat. Lep. N. Am. p. 156.

Head and thorax purplish grey irrorated with fuscous; head with blackish tuft between antennæ; tegulæ with blackish medial line; patagia edged with black on outer side; abdomen brownish grey. Fore wing purplish grey irrorated with fuscous; a brownish shade on medial area and on outer part of postmedial and terminal areas except at apex; subbasal line double, blackish, interrupted; a slight black streak below base of cell; antemedial line greyish, not defined by black, excurved; claviform defined by black, short, broad, acute; orbicular and reniform rather small, with grey annuli defined by black, the former oblique elliptical; postmedial line double filled in with grey, bent outwards below costa, excurved to vein 4, then incurved to lower edge of reniform; subterminal line white, defined by the dark shading on each side of it, angled outwards at vein 7 and incurved at submedian fold; a fine dark line at base of cilia, which are grey intersected with fuscous. Hind wing fuscous, paler at base; the cilia whitish: the underside paler

grey irrorated with fuscous, a dark discoidal spot and curved postmedial band.

Hab. U.S.A., Colorado, Hall Valley. *Exp.*, ♂ 30, ♀ 23 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

1227. Polia orientalis. (Plate LXXX. fig. 12.)

Dianthœcia orientalis, Alph. Hor. Soc. Ent. Ross. xvii. p. 71, pl. 2. f. 52 (1882); Staud. Cat. Lep. pal. p. 161.
Dianthœcia uniformis, Staud. Iris, ix. p. 256 (1896).

Head and thorax grey mixed with brown; palpi blackish except at tips; tegulæ with two dark lines; patagia edged with black above; tarsi with white rings; abdomen grey mixed with brown. Fore wing grey thickly irrorated with brown; a waved black streak below base of cell; subbasal line represented by black striæ from costa and cell, defined by whitish on outer side; antemedial line oblique, waved, defined by grey on inner side; claviform moderate, defined by black; orbicular and reniform with brown centres and white annuli defined by black, the former small, oblique elliptical, the area between and beyond them suffused with brown; traces of a curved medial line; postmedial line dentate and produced to dark streaks interrupted by pale points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa and a pale oblique band arising from apex; subterminal line whitish, defined by slight somewhat dentate brown marks on inner side and some fuscous on outer, angled outwards at vein 7 and somewhat dentate at veins 4, 3; a terminal series of black lunules; cilia brown intersected with white. Hind wing fuscous brown; cilia white, with a brown line through them; the underside grey irrorated with brown, a discoidal spot and sinuous postmedial line.

Ab. 1. *uniformis*. Fore wing more uniform brownish grey.—Mongolia.

Hab. W. Turkestan, Tura, 1 ♂, 3 ♀, Ferghana, Issyk-kul; E. Turkestan, Ili; Mongolia, Uliassutai Mts., Urga, 1 ♂. *Exp.* 34 millim.

1228. Polia oriza.

Celæna oriza, Druce, Biol. Centr.-Am., Het. i. p. 275, pl. 26. f. 28 (1889).

♂. Head and thorax purplish red-brown mixed with white; tegulæ yellowish at base and tipped with white; tarsi ringed with white; abdomen rufous mixed with white. Fore wing whitish, mostly suffused and irrorated with red-brown, the medial area darker red-brown; subbasal line from costa to submedian fold, angled outwards at median nervure and defined by white on outer side; the antemedial line double filled in with white, strongly angled outwards below costa, then very oblique and sinuous; orbicular white with rufous tinge in centre, V-shaped, open above,

its lower extremity connected by a white fascia with the reniform, which is **U**-shaped, open above, with brown centre and white annulus; postmedial line double filled in with white, strongly bent outwards below costa, incurved, oblique and slightly sinuous below vein 6, joining the antemedial line above inner margin, some diffused white on its outer edge and some white points on costa; subterminal line only defined by the area beyond it being

Fig. 21.—*Polia oriza*, ♂. ½.

more purplish grey, angled outwards at vein 7 and excurved at middle, joined by an oblique dark streak from termen below apex; a fine pale line at base of cilia. Hind wing white, the costal and terminal areas slightly tinged with red-brown, a rufous terminal line; the underside with the costal area irrorated with rufous, a dark discoidal point and traces of a sinuous postmedial line.

Hab. Mexico, Coatepec (*Brooks*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 30 millim.

1229. Polia rubens.

Celæna rubens, Druce, Biol. Centr.-Am., Het. i. p. 274, pl. 26. f. 25 (1889).

Head and thorax purplish red-brown mixed with a few white scales; tegulæ with black line near tips; patagia partly edged with black; abdomen dark purplish brown. Fore wing purple-brown suffused with grey; an olive-green streak in submedian fold to postmedial line; subbasal line double, blackish filled in with grey, waved, from costa to submedian fold, where it is connected with base by a black streak; antemedial line double filled in with grey, strongly angled outwards below costa, then obliquely waved and bent inwards to inner margin; claviform more or less elongate, strongly defined by black; orbicular and reniform small, with white annuli slightly defined by black, the former oblique elliptical, the latter with yellowish centre, narrow, strongly angled inwards on median nervure, slightly in female; postmedial line double filled in with grey, oblique from below costa to vein 5, then strongly incurved, some pale points beyond it on costa, the area beyond it greyish, shading to rufous before the grey subterminal line, which is prominent, angled inwards below costa and in submedian fold, outwards at vein 7 and excurved at middle; a terminal series of black points; a fine grey line at base of cilia. Hind wing white, the costal area tinged with brown, the inner and terminal areas

also in female; a fine terminal brown line; the underside with the costal area irrorated with brown, a dark discoidal point and traces of a curved postmedial line.

Hab. Mexico city (*Godman*, *Hoege*), 1 ♂, 1 ♀, Jalapa (*Hoege*), 1 ♂ type, Godman-Salvin Coll. *Exp.*, ♂ 28, ♀ 32 millim.

1230. Polia lepidula.

Mamestra lepidula, Smith, Proc. U.S. Nat. Mus. x. p. 463 (1887); id. Cat. Noct. N. Am. p. 115.
Celæna perta, Druce, Biol. Centr.-Am., Het. i. p. 275, pl. 26. f. 26 (1889).

♀. Head and thorax bright rufous, tegulæ and patagia edged with grey, the scales on vertex of head and thorax tipped with grey; abdomen brown mixed with ochreous, the anal tuft rufous. Fore wing ferruginous and bright chestnut; the costal area except at base, the medial area except beyond the reniform and between cell and submedian fold, and the terminal area darker brown; a nearly straight subbasal chestnut line from costa to submedian fold, defined by grey on outer side; the antemedial line defined by grey on inner side, oblique from costa to submedian fold, then angled inwards on vein 1; claviform minute, defined by chestnut; orbicular grey, oblique oblong or elliptical; reniform whitish, diffused above and with small dark brown spot on it at lower angle of cell; postmedial line defined by grey on outer side, bent outwards below costa, excurved to vein 5, then incurved and sinuous; subterminal line whitish, excurved below costa and at middle, angled inwards at discal and submedian folds, the area beyond it dark brown; cilia chequered reddish brown and white. Hind wing whitish suffused with reddish brown, the cilia yellowish white; the underside white irrorated with rufous, a discoidal point and curved postmedial line.

Hab. U.S.A., Texas, California, Los Angeles; Mexico, Las Vigas (*Hoege*), 1 ♀ type *perta*, Godman-Salvin Coll. *Exp.* 30 millim.

1231. Polia distincta.

Achatia distincta, Hübn. Samml. Ex. Schmett. i. pl. 194 (1827); Grote & Rob. Trans. Am. Ent. Soc. ii. p. 197, pl. iii. f. 72; Smith, Cat. Noct. N. Am. p. 116.
Dicopis vitis, French, Can. Ent. xi. p. 76 (1879).

Head and thorax grey-white mixed with fuscous; palpi black at sides; frons with black bar; tegulæ with black medial line and dark tips; patagia edged above with black scales; tarsi banded with black; abdomen whitish, dorsally irrorated with fuscous and tinged with rufous. Fore wing grey-white irrorated with pale brown; subbasal line represented by double white striæ from costa and cell; antemedial line double filled in with white, angled outwards below costa, then obliquely excurved, its inner part pale

olive below the cell and also its outer part below vein 1 ; claviform short and broad, defined by black and with a black streak from it to postmedial line ; orbicular and reniform large, grey tinged with reddish brown and defined by black, the former rounded, open above and below, the latter extending to below cell, the cell before and between them and the area below it suffused with brown ; traces of a medial line angled outwards below costa and on median nervure and inwards to antemedial line above vein 1 ; postmedial line double filled in with white, somewhat dentate and produced to slight points on the veins, bent outwards below costa, excurved to vein 4, then incurved ; subterminal line irregularly dentate, angled outwards at vein 7 and excurved at middle, with some small dentate black marks defined by olive and fuscous suffusion beyond it except at apex and tornus and by a patch before it between veins 3, 4 ; the veins towards termen streaked with black ; a terminal series of small triangular black marks ; cilia chequered olive and white. Hind wing whitish, the veins and terminal area suffused with brown ; the underside with dark discoidal point and curved punctiform postmedial line.

Hab. Canada ; U.S.A., E. States, 1 ♂, 1 ♀, Illinois, Central States, Texas, Dallas (*Boll*), 2 ♂, Colorado. *Exp.* 40 millim.

Larva. Marten, Tr. Dept. Agr. Ill. 18, app. 136 (1880).

Head green. Body green marked with greenish white ; a faint dorsal line edged with dark green, subdorsal line distinct, stigmatal line faint.—H. G. D.

*1232. Polia literata. (Plate LXXX. fig. 13.)

Cucullia literata, Fisch. de Waldheim, Bull. Mosc. 1840, i. p. 86, pl. 3. f. 4 ; Staud. Cat. Lep. pal. p. 161.

♀. Head and thorax grey and dark brown mixed ; tegulæ with dark medial line ; abdomen ochreous mixed with dark brown. Fore wing whitish, almost entirely suffused with ochreous brown, dark brown, and some grey, leaving patches of white below the cell beyond subbasal line, as a dentate mark beyond the claviform and on inner area beyond postmedial line ; subbasal line double filled in with whitish, waved, from costa to submedian fold ; antemedial line double filled in with whitish, waved, oblique from costa to below cell, then angled inwards on vein 1 ; claviform defined by black, acute at extremity ; orbicular and reniform large, defined by black, the former white, rather quadrate, the latter with brown centre and white annulus ; postmedial line black defined by white, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa ; subterminal line pale defined by brown on inner side, excurved at vein 7, somewhat dentate on veins 4, 3, and bent outwards to tornus, towards which it is slightly defined by black, the area beyond it greyer ; a terminal series of black lunules ; cilia with a black line at base. Hind wing reddish

brown irrorated with grey; cilia whitish, with a brown line through them; the underside grey thickly irrorated with brown, a slight discoidal spot and sinuous postmedial line.

Hab. S. Russia, Sarepta, in Coll. Elwes. *Exp.* 46 millim.

1233. Polia luteago.

Noctua luteago, Schiff. Wien. Verz. p. 86 (1777); Hübn. Samml. Eur. Schmett., Noct. f. 184; Dup. Lép. Fr. Suppl. iii. p. 246, pl. 23. ff. 3. 4; Staud. Cat. Lep. pal. p. 161.
Noctua brunneago, Esp. Schmett. iv. pl. 196. ff. 2, 3 (1796).
Noctua argillacea, Hübn. Samml. Eur. Schmett., Noct. f. 590 (1827).
Noctua olbiena, Geyer, Samml. Eur. Schmett., Noct. ff. 829, 830 (1834).
Dianthœcia barrettii, H. Doubl. Ent. Ann. 1864, p. 124, f. 3.
Dianthœcia andalusica, Staud. Stett. ent. Zeit. 1859, p. 214; Ramb. Cat. Lép. S. And. pl. xi. f. 4; Staud. Cat. Lep. pal. p. 161.

Head and thorax yellow mixed with fulvous; abdomen fulvous yellow. Fore wing yellow, suffused in part with fulvous, especially on costal and medial areas; subbasal line pale, waved, from costa to submedian fold; antemedial line double, waved, the inner line

Fig. 22.—*Polia luteago*, ♂. ½.

indistinct; claviform with its extremity slightly defined by rufous, with more or less distinct pale dentate patch beyond it below the cell; orbicular and reniform well-developed, yellow defined by rufous and with slight brownish centres, the former rounded; an indistinct waved medial line; postmedial line indistinctly double, dentate, bent outwards below costa and incurved below vein 4; some pale points on costa beyond it; subterminal line indistinct, pale, angled outwards at vein 7 and dentate at veins 4, 3, the area beyond it rather darker except at apex; a terminal series of small dark lunules; cilia chequered brown and ochreous. Hind wing yellow suffused with fuscous brown; the underside yellow irrorated with brown; a discoidal lunule and curved postmedial line.

Ab. 1. *argillacea*. Head, thorax, and abdomen dark brown mixed with grey; fore wing grey suffused with dark brown, especially on medial area; the markings black; a black mark below base of cell bisected by the subbasal line; claviform connected with postmedial line by a dark streak; orbicular, reniform, and a

patch on base of vein 2 grey: hind wing fuscous brown, the cilia ochreous white.

Hab. Britain, Ireland, Leech Coll.; Guernsey (*F. E. Lowe*); France, Sand Coll.; Germany, Zeller Coll.; Austria, Zeller & Leech Colls.; Spain, Andalusia, Castille; Corsica; Italy; Algeria; Russia, Sarepta, Zeller Coll., Urals; Armenia; Asia Minor, Pontus; Mesopotamia; W. Turkestan, Ferghana, Issyk-kul; W. Siberia, Altai. *Exp.* 34–44 millim.

Larva. Meyr. Brit. Lep. p. 78; Barrett, Lep. Brit. iv. p. 261, pl. 165. f. 2.

Pale ochreous with a slight pinkish tinge; dorsal line indistinct, fuscous; head reddish pink with blackish markings. Food-plants: roots of *Silene maritima* and *inflata*. 7–9.

1234. **Polia canities**, n. sp. (Plate LXXX. fig. 14.)

♂. Head and thorax pale brownish white irrorated with dark brown; palpi banded with fuscous; abdomen brownish ochreous irrorated with dark brown. Fore wing pale ochreous brown sparsely irrorated with white; traces of a double subbasal line from costa to submedian fold; antemedial line very indistinct, oblique, waved; claviform faintly defined by brown; orbicular and reniform almost obsolete, defined by a few yellow and dark scales, the former round; postmedial line very indistinct, dentate and produced to white points on the veins, bent outwards below costa, excurved to vein 4, then oblique, some pale points beyond it on costa; subterminal line formed by a series of very obscure yellowish and dark lunules, angled outwards at vein 7 and excurved at middle; fine pale lines at base and through middle of cilia. Hind wing whitish irrorated with brown, the terminal area suffused with brown; cilia whitish, with a brown line through them: the underside with discoidal point, curved postmedial line, and terminal fuscous band.

Hab. U.S.A., California, 1 ♂. *Exp.* 32 millim.

1235. **Polia discolor.** (Plate LXXX. fig. 15.)

Scotogramma discolor, Smith, Journ. N.Y. Ent. Soc. vii. p. 42 (1899); Dyar, Cat. Lep. N. Am. p. 159.

♂. Head and thorax clothed with pale reddish brown and black scales and hairs; tarsi ringed with white; abdomen pale brown mixed with dark brown. Fore wing pale ochreous, almost entirely irrorated and suffused with fuscous brown; subbasal line represented by an oblique series of three groups of black scales; antemedial line black, oblique from costa to submedian fold, then angled inwards on vein 1; claviform very obscurely defined by black; orbicular round, very indistinct, with pale annulus; reniform represented by an obscure X-shaped black mark; postmedial line irregularly dentate and formed by a series of black lunules, bent outwards below costa, excurved to vein 4, then incurved; subterminal line represented by a series of somewhat dentate black

marks, angled outwards at vein 7 and excurved at middle; a terminal series of black lunules. Hind wing fuscous brown; the underside paler, irrorated with brown and black, a black discoidal lunule and curved postmedial line.

Hab. U.S.A., Colorado, 1 ♂. *Exp.* 30 millim.

1236. Polia determinata. (Plate LXXX. fig. 16.)

Mamestra determinata, Smith, Proc. U.S. Nat. Mus. xiv. p. 209 (1891); id. Cat. Noct. N. Am. p. 115.

♂. Head and thorax reddish brown and grey, the scales tipped with grey; abdomen brownish ochreous. Fore wing ochreous whitish, suffused and irrorated with rufous, most strongly on medial area; the median nervure, the costal area beyond antemedial line, and the terminal area dark brown irrorated with white; subbasal line obsolete; antemedial line single, oblique from costa to submedian fold, then slightly angled inwards on vein 1; orbicular and reniform with rufous centres and whitish annuli defined by black, the former irregularly rounded, the latter concave towards base and with fuscous spot in its lower extremity; traces of a waved medial line; postmedial line rather indistinct, dentate and produced to points on the veins, bent outwards below costa and incurved below vein 4, some pale points beyond it on costa; subterminal line only defined by the area beyond it being darker, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing pale suffused with reddish brown, paler towards base and inner margin; cilia white, with a strong brown line through them; the underside whitish, the costal and terminal areas irrorated with brown, a slight discoidal lunule.

Hab. U.S.A., Colorado, 1 ♂, foothills (*Bruce*), in Coll. Schaus. *Exp.* 34 millim.

1237. Polia columbia. (Plate LXXX. fig. 17.)

Tæniocampa columbia, Smith, Pr. U.S. Nat. Mus. x. p. 472 (1887); id. Cat. Noct. N. Am. p. 202.

♂. Head and thorax bright rufous, the hairs tipped with grey: abdomen reddish ochreous, sometimes darker, with the anal tuft redder, the ventral surface irrorated with white. Fore wing bright rufous irrorated with grey; the lines rather indistinct, the veins with brownish streaks; traces of a subbasal line from costa to submedian fold; the antemedial line oblique from costa to submedian fold, then waved; orbicular and reniform moderate, greyish defined by rufous, the former round, the latter with some fuscous in lower part; a medial rufous shade, oblique from costa to lower angle of cell; the postmedial line minutely dentate, bent outwards below costa, slightly incurved at discal fold, incurved

below vein 4; some grey points on costa towards apex; subterminal line pale, defined by the area beyond it being greyer, excurved at vein 7 and middle, angled inwards in discal and submedian folds. Hind wing brownish ochreous, browner towards termen; the cilia ochreous at base, then with brown line and whitish tips; the underside with the costal and terminal areas slightly irrorated with brown, a discoidal point and curved postmedial line.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 5 ♂, N.W. Br. Columbia. *Exp.* 34 millim.

1238. Polia meditata. (Plate LXXX. fig. 18.)

Dianthœcia meditata, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 104 (1873); Smith, Cat. Noct. N. Am. p. 115.

Head and thorax dark red-brown more or less strongly irrorated with grey; abdomen grey-brown, the anal tuft of male paler. Fore wing red-brown, suffused with fuscous and slightly irrorated with grey; traces of a waved grey subbasal line from costa to submedian fold; antemedial line indistinct, double filled in with grey, oblique, waved; claviform small, defined by brown; orbicular and reniform moderate, with greyish annuli incompletely defined by brown, the former rather oblique elliptical; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved, some grey points beyond it on costa; subterminal line defined by the area beyond it being somewhat darker and suffused with grey, slightly angled outwards at vein 7 and excurved at middle; the veins of terminal area dark; a fine dark terminal line. Hind wing dark brown, sometimes yellowish towards base; cilia with fine pale line at base and whitish tips; the underside whitish irrorated with brown, the costal area sometimes tinged with rufous, a dark discoidal spot and curved postmedial line.

Hab. Canada (*Norman*), 1 ♂; U.S.A., Eastern States to Virginia and Mississippi, 1 ♂, 1 ♀, type, Kansas. *Exp.* 34 millim.

Larva. Head brown, with broad curved black bands in front and black reticulations. Body sordid reddish brown, dorsal space broadly paler, enclosing dorsal rounded lozenge-shaped dark patches: sides dark; lines obscurely indicated, the substigmatal broad, scarcely paler than ground-colour. Cervical shield shining black, luteous-dotted centrally and cut by distinct dorsal and more diffuse subdorsal orange lines. Feet black. Tubercles minute.—H. G. D.

1239. Polia leucogramma. (Plate LXXX. fig. 19.)

Dianthœcia leucogramma, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 140 (1873); Smith, Cat. Noct. N. Am. p. 115.

♂. Head and thorax dark brown mixed with grey; abdomen reddish brown irrorated with grey. Fore wing reddish brown irrorated with black; a double, waved subbasal line from costa to

submedian fold filled in with grey; antemedial line double filled in with grey, waved and angled inwards in cell and on vein 1; claviform small, defined by black; orbicular and reniform small, defined by black and with some grey in centres, the former round; a medial black shade darkening the cell between the stigmata; postmedial line double filled in with whitish, minutely waved, bent outwards below costa, incurved at discal fold and below vein 4, some pale points on costa beyond it; subterminal line white, defined on inner side by some small dentate dark marks between veins 5 and 1, angled outwards at vein 7 and excurved at middle; some white suffusion on terminal area; a terminal series of small black lunules; cilia chequered brown and white. Hind wing brown, darker towards termen; cilia white, with brown line at base; the underside white irrorated with brown, the terminal area suffused with brown, a dark discoidal point and curved postmedial line.

Hab. U.S.A., California, 1 ♂, Grote Coll. *Exp.* 32 millim.

*1240. Polia mohosa. (Plate LXXX. fig. 20.)

Hecatera mohosa, Dogn. Ann. Soc. Ent. Belge, xli. p. 412 (1897).

♂. Head and thorax clothed with pale brown, black, and white scales; palpi blackish at sides; tarsi banded black and white; abdomen grey-brown, dorsally tinged with fuscous. Fore wing whitish, largely suffused with rufous and in parts with fuscous; the veins streaked with fuscous and white; a double, waved, black subbasal line from costa to submedian fold; a double, waved antemedial line angled outwards below costa and excurved above inner margin; claviform black; orbicular with rufous centre and white annulus defined by black, rather small, rounded; reniform with white centre defined by brown and white annulus defined by black, angled inwards on median nervure; the postmedial line dentate and produced to points on the veins, strongly bent outwards below costa and inwards below vein 4, then defined by whitish on outer side; some white points on costa towards apex; the subterminal line white, angled outwards at vein 7 and excurved at middle, the area beyond it grey irrorated with fuscous; a terminal series of small black lunules. Hind wing whitish suffused with brown, especially on terminal half; the cilia whitish; the underside white irrorated with brown, a dark discoidal point and curved postmedial line.

Hab. Ecuador, Loja, type †♂ in Coll. Dognin. *Exp.* 20 millim.

*1241. Polia orizabena. (Plate LXXX. fig. 21.)

Hadena orizabena, Schaus, J. N.Y. Ent. Soc. vi. p. 142 (1898); Druce, Biol. Centr.-Am., Het. ii. p. 568.

♂. Head and thorax dark reddish brown mixed with purplish

fuscous; tarsi with pale pinkish rings; abdomen purplish pink, brown towards extremity, the basal crest dark. Fore wing black-brown suffused with puplish pink and with a grey gloss; an indistinct, double, waved subbasal line from costa to submedian fold; antemedial line double filled in with paler colour, angled outwards below costa, oblique to submedian fold, then recurved to inner margin; the medial area rather darker; the claviform very obscurely defined by black; orbicular and reniform small, the former greyish, the latter rather concave towards base, with pinkish annulus and prominent white spot on its outer edge; the postmedial line indistinctly double filled in with pinkish, bent outwards below costa, and incurved below vein 4 to near antemedial line, some pale points beyond it on costa; the subterminal line represented by whitish points on black streaks extending to termen, the terminal area rather darker; some pinkish points at base of cilia. Hind wing ochreous white suffused with brown, the area below the cell whiter; a terminal series of dark striæ; the underside with the costal area tinged with pink, a black discoidal spot and waved postmedial lide.

Hab. Mexico, Orizaba, type † ♂ in Coll. Schaus. *Exp.* 30 millim.

1242. **Polia brachiola.** (Plate LXXX. fig. 22.)

Mamestra brachiolum, Harv. Can. Ent. viii. p. 6 (1876); Smith, Cat. Noct. N. Am. i. p. 123.

Head, thorax, and abdomen black-brown mixed with grey; tegulæ with slight black medial line. Fore wing grey suffused and irrorated with black-brown and with a slight purplish tinge; a waved subbasal black line from costa to submedian fold, defined by grey on outer side; a double, waved, oblique antemedial line, angled inwards in cell and filled in with grey; claviform very small, defined by black; orbicular and reniform defined by black, incompletely above, the former small or moderate, rounded; an indistinct waved medial line, angled outwards to lower angle of cell; postmedial line double, dentate, filled in with grey, bent outwards below costa, excurved to vein 4, then oblique; the postmedial area grey except at costa; subterminal line grey, angled outwards at vein 7, excurved at middle, and bent outwards to tornus, with some black marks on inner side from vein 5 to inner margin, slightly defined by black on outer side; a terminal series of black points; cilia fuscous and grey. Hind wing fuscous brown, paler towards base in male; cilia white, with a brown line through them; the underside whitish thickly irrorated with dark brown, the terminal area suffused with brown, a discoidal point and curved postmedial line.

Hab. U.S.A., Texas, 1 ♂, 1 ♀, type, Arizona. *Exp.* 34 millim.

1243. **Polia rubrifusa**, n. sp. (Plate LXXX. fig. 23.)

♂. Head and thorax fuscous mixed with some black, the scales tipped with white; tarsi ringed with white; abdomen brown mixed with grey, the dorsal crests blackish. Fore wing dark grey thickly irrorated and suffused with black and with a slight purplish tinge; the inner and postmedial areas tinged with vinous red, the discal and submedian folds on medial area suffused with deep red; subbasal line indistinct, waved, from costa to submedian fold; the antemedial line double, the inner line indistinct, angled outwards below costa, then oblique, waved; claviform absent; orbicular and reniform small, reddish with slight white annuli defined by black, the former round, the latter concave on inner side and with some fuscous in its lower part; an indistinct waved medial line; postmedial line defined by whitish on outer side, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa on a fuscous patch extending to subterminal line, which is pale reddish defined on inner side by minute dentate brown marks and by some fuscous on outer, slightly angled outwards at vein 7 and excurved at middle; a fine terminal black line; cilia dark brown. Hind wing pale suffused with brown, the terminal half dark brown; the cilia brown at base, whitish at tips; the underside white thickly irrorated with brown, a slight discoidal lunule and curved postmedial line.

Hab. U.S.A., New Mexico, Beulah, 1 ♂. *Exp.* 34 millim.

*1244. **Polia umbrosa.** (Plate LXXX. fig. 24.)

Scotogramma umbrosa, Smith, Pr. U.S. Nat. Mus. x. p. 470 (1887); id. Cat. Noct. N. Am. p. 139.

♀. Head and thorax blackish mixed with grey; frons with black bar; tegulæ with ill-defined dark medial line; tarsi ringed with white; abdomen fuscous brown mixed with grey. Fore wing grey mostly suffused and irrorated with fuscous brown, the medial area rather darker; subbasal line double filled in with whitish, waved, from costa to submedian fold; antemedial line double filled in with whitish, waved and angled inwards on vein 1; claviform moderate, indistinctly defined by black and with some pale reddish brown beyond its extremity; orbicular and reniform with indistinct greyish annuli defined by black, the former small, round, the latter slightly angled inwards on median nervure and with a faint reddish tinge before and beyond it; traces of a waved medial line; postmedial line defined by greyish on outer side, minutely dentate and produced to whitish points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line white, hardly defined on inner side,

minutely dentate, angled outwards at vein 7 and excurved at middle; cilia whitish mixed with brown and with a brown line through them. Hind wing pale tinged with fuscous, especially on the veins and terminal area; cilia white with a dark line through them; the underside white, the costal and terminal areas irrorated with fuscous, a small discoidal spot and curved postmedial line.

Hab. U.S.A., Colorado, Arizona, in U.S. Nat. Mus. *Exp.* 34 millim.

1245. **Polia plicata.** (Plate LXXX. fig. 25.)

Mamestra plicata, Smith, Ent. News Philad. ix. p. 243 (1898); Dyar, Cat. Lep. N. Am. p. 155.

Mamestra negussa, Smith, Can. Ent. xxxii. p. 219 (1900); Dyar, Cat. Lep. N. Am. p. 156.

Head, thorax, and abdomen grey mixed with dark brown. Fore wing grey thickly irrorated with fuscous brown; the cell and area just beyond and below it tinged with rufous; the veins with somewhat darker streaks; an indistinct subbasal line defined by grey on outer side, angled outwards in cell and extending to submedian fold; antemedial line double, waved, filled in with grey; claviform small, grey indistinctly defined by brown, or rather larger and better defined; orbicular and reniform grey defined by black, the former oblique elliptical, the latter with some fuscous in its lower part; traces of an oblique waved medial line from cell to inner margin; postmedial line defined by grey on outer side, minutely waved, bent outwards below costa and incurved below vein 4; some pale points on costa towards apex; subterminal line whitish, angled outwards at vein 7 and excurved at middle. Hind wing grey-brown with fine dark terminal line; the underside grey irrorated with brown, a discoidal lunule and curved postmedial line.

Hab. CANADA, Alberta, Calgary (*Wolley-Dod*), 1 ♂, 1 ♀; U.S.A., Colorado in U.S. Nat. Mus. *Exp.* 40 millim.

*1246. **Polia gnata.** (Plate LXXXVI. fig. 8.)

Mamestra gnata, Grote, Can. Ent. xiv. p. 170 (1882); Smith, Cat. Noct. N. Am. p. 116.

♂. Head and thorax dark brown mixed with grey; tegulæ with black medial line; abdomen pale grey-brown. Fore wing dark grey suffused with yellowish brown; the lines double; subbasal line indistinct; antemedial line minutely waved, oblique from costa to median nervure; claviform defined by black, small; orbicular and reniform well developed, with pale annuli defined by black, the former rather oblique elliptical; a slight medial shade from lower angle of cell to inner margin; postmedial line minutely waved, bent outwards below costa and incurved below vein 4, the

area beyond it greyer, with a prominent pale patch on inner area before subterminal line, which is pale defined by the area beyond it being darker, incurved at discal and submedian folds. Hind wing white, the veins and termen tinged with brown; the underside with dark irroration.

Hab. U.S.A., New Mexico, Arizona. *Exp.* 32 millim. This species is unknown to me; figured from a drawing from type in Brooklyn Institute of Arts and Sciences.

*1247. Polia selama.

Mamestra selama, Streck. Lep. Rhop. & Het. Suppl. i. p. 7 (1898); Dyar, Cat. Lep. N. Am. p. 156.

♂. Head, thorax, and abdomen fuscous tinged with grey. Fore wing fuscous irrorated with grey and with a silky texture; the markings black defined by grey; no black streak below base of cell; claviform absent; terminal area grey; an indistinct black terminal line; cilia fuscous. Hind wing fuscous, paler at base; cilia whitish, with a dark line through them.

Hab. U.S.A., Texas. *Exp.* 28 millim. This species is unknown to me.

1248. Polia tenebra, n. sp. (Plate LXXX. fig. 26.)

♂. Head and thorax brown mixed with white and black scales; tarsi with pale rings; abdomen reddish brown. Fore wing fuscous brown mixed with grey and slightly tinged in parts with dull olive; subbasal line double, waved, interrupted at middle, from costa to vein 1; antemedial line irregularly waved, oblique, defined by grey on inner side; claviform moderate, defined by black; orbicular and reniform defined by black, the former small, round, with white annulus, the latter indistinct, irregular; an indistinct waved medial line; postmedial line defined by whitish on outer side, dentate, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line whitish, defined on inner side by a series of small dentate black marks, slightly angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia whitish and fuscous with a black line at base. Hind wing pale suffused with brown, the terminal area darkest, a slight discoidal spot, sinuous postmedial line, and some terminal lunules; cilia whitish with a dark line near base; the underside whitish irrorated with brown.

Hab. Kashmir, Deosai Plains (*Leech*), 1 ♂ type. *Exp.* 36 millim.

*1249. Polia pusilla. (Plate LXXX. fig. 28.)

Thargelia pusilla, Püng. Iris, xiii. p. 118, pl. iv. f. 10 (1900); Staud. Cat. Lep. pal. p. 254, add.

♂. Head, thorax, and abdomen grey-white mixed with pale olive-brown and black; tarsi banded with black. Fore wing grey-white suffused with olive-brown and irrorated with fuscous; the subbasal line represented by an obscure striga from costa and two from cell; antemedial line very oblique and rather irregular from costa to submedian fold, angled inwards on vein 1 and outwards to the postmedial line above inner margin, defined by whitish on inner side; claviform an ill-defined whitish mark; orbicular a small ill-defined whitish mark with dark point at centre; reniform whitish, ill-defined except on inner side, where its centre and circumference are defined by black; postmedial line double filled in with white, minutely dentate, bent outwards below costa, excurved to vein 4, then oblique; subterminal line formed by a series of whitish and dark dentate marks, angled outwards at vein 7 and dentate to termen at veins 4, 3; a terminal series of small black lunules; cilia chequered fuscous and whitish. Hind wing whitish, uniformly suffused with fuscous; cilia white with a brown line through them; the underside white irrorated with brown, a discoidal spot and curved postmedial line.

Hab. Transcaspia, Askhabad, in Coll. Püngeler. *Exp.* 36 millim.

1250. Polia serratilinea.

Mamestra serratilinea, Treit. Schmett. Eur. v. 2, p. 38 (1825); Dup. Lép. Fr. vi. p. 430, pl. 99. f. 6; Herr.-Schäff. Eur. Schmett., Noct. f. 395; Staud. Cat. Lep. pal. p. 155.
Mamestra polyodon, Hübn. Eur. Schmett., Noct. f. 365 (1827), nec Clerck.

Head, thorax, and abdomen ochreous brown mixed with grey; tarsi fuscous with pale rings. Fore wing grey irrorated and suffused with ochreous brown; a double, waved subbasal line from costa to submedian fold; a waved antemedial line defined by grey on inner side; claviform defined by brown and often filled in with brown; orbicular and reniform large, rather indistinctly defined by brown, the former irregularly rounded, the latter with two white points on outer side at lower extremity and one on inner; a curved waved medial line approximated below the cell to the postmedial line, which is strongly dentate and produced to grey points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; a dentate whitish subterminal line defined by somewhat dentate brown marks on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; a series of whitish points at base of cilia. Hind wing whitish tinged with brown, especially on the veins and terminal area; cilia ochreous white with a brown line through them; the underside whitish, the costal and terminal areas slightly

irrorated with brown, a slight discoidal lunule and curved post-medial line.

Hab. Germany, Zeller Coll.; Switzerland, Leech Coll.; Austria, Zeller Coll.; Hungary, Frey Coll.; Armenia; W. Siberia, Altai, Leech Coll. *Exp.* 46–56 millim.

Larva. Grey with a dark head. On low-growing plants in spring.

1251. Polia spalax.

Mamestra spalax, Alph. Stett. ent. Zeit. 1887, p. 168; id. Rom. Mém. v. p. 144, pl. 6. f. 5; Staud. Cat. Lep. pal. p. 155.

♀. Head and thorax grey mixed with yellowish or dark brown; tarsi with pale rings; abdomen grey mixed with brown. Fore wing grey, more or less tinged with ochreous and thickly irrorated with fuscous brown; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line indistinct, double, waved; claviform moderate, defined by fuscous; orbicular and reniform large, defined by fuscous, the former irregularly rounded, with slight whitish annulus, the latter irregular with whitish points on edges, somewhat angled inwards on median nervure; traces of a waved medial line; postmedial line double, dentate and produced to a double series of points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line represented by a series of whitish dentate marks slightly defined by fuscous, angled outwards at vein 7 and excurved at middle; a terminal series of fuscous lunules; cilia with ochreous line at base, then a fuscous line, the tips whitish and fuscous. Hind wing pale suffused with fuscous brown with a slight reddish tinge; the cilia with ochreous and fuscous lines at base and white tips; the underside whitish irrorated with fuscous, a discoidal lunule and curved postmedial line with darker streaks at the veins.

Hab. Russia, Urals; Persia, Mesopotamia; W. Turkestan, 2 ♀, Ferghana, Sarawschan, Issyk-kul, Ala Tau; W. Siberia, Altai; E. Turkestan, Ili. *Exp.* 34–36 millim.

1252. Polia insolens.

Dianthœcia insolens, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 65 (1874); Smith, Cat. Noct. N. Am. p. 115.
Teniocampa earina, Morr. Proc. Bost. Soc. N. H. xvii. p. 158 (1874).

Head and thorax clothed with whitish and pale brown hair; abdomen whitish tinged with red-brown. Fore wing whitish or luteous, suffused and irrorated with dark brown or nearly uniform pale dull brown; an indistinct waved subbasal line from costa to submedian fold; antemedial line oblique, waved, angled outwards below costa; claviform very indistinctly defined by brown; orbicular and reniform large, defined by whitish or ochreous, the former round; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line almost evenly

curved, defined on inner side by a series of dentate fuscous marks and by the area beyond it being rather darker; a terminal series of small dark lunules; cilia whitish, with a dark line through them. Hind wing whitish suffused with brown; the underside white slightly irrorated with brown, a brown discoidal point and curved postmedial line.

Hab. U.S.A., California, 3 ♀ type, San Francisco (*Stretch*), 3 ♂, 1 ♀. *Exp.*, ♂ 40–44, ♀ 46–52 millim.

Sect. V. Antennæ of male ciliated.

A. Prothorax with divided crest.
  a. Fore wing with black streak below base of cell.
    a^1. Fore wing with the subterminal line dentate on veins 4, 3, and forming a distinct ≷-mark.
      a^2. Fore wing with the ante- and postmedial lines conjoined by a black streak in submedian fold.
        a^3. Fore wing with pale dentate mark beyond the claviform.
          a^4. Fore wing with the ground-colour ochreous white ..... *peregrina.*
          b^4. Fore wing with the ground-colour purplish grey ..... *contigua.*
        b^3. Fore wing without pale dentate mark beyond the claviform.
          a^4. Fore wing with the postmedial area distinctly paler than the medial area.
            a^5. Fore wing with the basal streak broad... *grandis.*
            b^5. Fore wing with the basal streak narrow. *w-latinum.*
          b^4. Fore wing with the postmedial area hardly paler than the medial area.
            a^5. Fore wing not tinged with purplish red. *invalida.*
            b^5. Fore wing tinged with purplish red.
              a^6. Fore wing with the subterminal line white .... *thalassina.*
              b^6. Fore wing with the subterminal line grey ..... *subjuncta.*
      b^2. Fore wing with the ante- and postmedial lines not conjoined by a black streak in submedian fold.
        a^3. Fore wing with the areas at base of costa, beyond the reniform, and the postmedial area bright rufous ..... *nevadæ.*
        b^3. Fore wing more uniform brown.
          a^4. Fore wing with whitish annuli to stigmata. *altaica.*
          b^4. Fore wing without whitish annuli to stigmata.
            a^5. Fore wing with the subterminal line white ..... *suasa.*
            b^5. Fore wing with the subterminal line grey..... *aliena.*
        c^3. Fore wing ochreous grey ..... *consanguis*, var.
    b^1. Fore wing without distinct ≷-mark on subterminal line.
      a^2. Fore wing with the terminal area not darker than the ground-colour .... *passa.*
      b^2. Fore wing with the terminal area darker than the ground-colour .... *ptochica.*

b. Fore wing without black streak below base of cell.
  a^1. Fore wing with the ground-colour ochreous or greyish ochreous.
    a^2. Fore wing with the orbicular V-shaped ..... *vau-orbicularis.*
    b^2. Fore wing with the orbicular rounded ..... *consanguis.*
  b^1. Fore wing with the ground-colour red-brown.
    a^2. Fore wing without pale streaks on the veins ... *fuscirufa.*
    b^2. Fore wing with pale streaks on the veins ..... *venata.*
  c^1. Fore wing with the ground-colour blackish.
    a^2. Fore wing without ochreous points on subterminal line ..... *mortua.*
    b^2. Fore wing with ochreous points on subterminal line ..... *persicariæ.*
  d^1. Fore wing with the ground-colour dark purplish grey more or less completely suffused with fuscous.
    a^2. Fore wing with pale postmedial patch in submedian interspace.
      a^3. Fore wing with the annulus of reniform and the subterminal line flesh-colour ..... *glaucopis.*
      b^3. Fore wing with the annulus of reniform and the subterminal line white ..... *cristifera.*
    b^2. Fore wing with the whole postmedial area purplish grey.
      a^3. Fore wing with the costal area concolorous.
        a^4. Fore wing with the inner area concolorous.
          a^5. Fore wing with the reniform large, whitish ..... *mamestrina.*
          b^5. Fore wing with the reniform smaller, grey ..... *ingravis.*
        b^4. Fore wing with ochreous-brown fascia on inner margin ..... *nagaensis.*
      b^3. Fore wing with grey streak below costa ..... *ferrispara.*
      c^3. Fore wing with the costal area pinkish ochreous ..... *costigera.*
  e^1. Fore wing with the ground-colour pale purplish grey more or less suffused with red-brown.
    a^2. Fore wing without distinct dark mark on subterminal fold ..... *mongolica.*
    b^2. Fore wing with angulate dark mark on subterminal line in submedian fold formed of two spots ..... *advena.*
    c^2. Fore wing with lunulate dark mark on subterminal line in submedian fold ..... *tincta.*
  f^1. Fore wing with the ground-colour whitish grey.
    a^2. Fore wing with the dorsum of thorax not variegated with white.
      a^3. Fore wing with prominent oblique dark medial shade on costal half.
        a^4. Fore wing with the subterminal line angled inwards in discal fold, and with prominent black streaks between it and termen ..... *latex.*
        b^4. Fore wing with the subterminal line not angled inwards in discal fold, and without black streaks between it and termen... *rogenhoferi.*
      b^3. Fore wing with the medial shade waved, indistinct.
        a^4. Fore wing tinged and irrorated with brown.
          a^5. Fore wing with the upper subterminal black spot in submedian interspace elongate ..... *subdubia.*

b^3. Fore wing with the upper subterminal black spot in submedian interspace short. *nimbosa.*
b^4. Fore wing thickly irrorated with fuscous... *mystica.*
b^2. Fore wing with the dorsum of thorax variegated with white.
a^3. Fore wing with the white annulus of reniform broken up into small spots.
a^4. Fore wing with white annulus to reniform on inner side; subterminal line not strongly defined by black..... *scotochlora.*
b^4. Fore wing with the white annulus to reniform obscured by a black lunule on inner side; subterminal line very strongly defined by black..... *goliath.*
b^3. Fore wing with the white annulus of reniform entire.
a^4. Fore wing without white spot beyond the claviform.
a^5. Fore wing with the orbicular moderate, with brown centre..... *adjuncta.*
b^5. Fore wing with the orbicular small, with white centre ..... *dilatata.*
b^4. Fore wing with white spot beyond the claviform.
a^5. Fore wing without brown centre to orbicular..... *variolata.*
b^5. Fore wing with brown centre to orbicular. *glaciata.*

1253. Polia peregrina.

Hadena peregrina, Treitsch. Schmett. Eur. v. 1, p. 330 (1825); Frr. Beitr. Eur. Schmett. pl. 70. f. 1; Staud. Cat. Lep. pal. p. 159.
Noctua blenna, Hübn. Eur. Schmett., Noct. f. 706 (1827).
Noctua trimenda, Hübn. Eur. Schmett., Noct. ff. 789–791 (1827).
Noctua contribulis, Bois. Dup. Lép. Fr. vii. p. 357, pl. 122. f. 1 (1827).
Hadena salsolæ, Rmbr. Ann. Soc. Obs. 1829, p. 258, pl. 6. f. 1.

Head and thorax ochreous-white mixed with pale rufous; tegulæ with medial black line; tarsi ringed with white; abdomen ochreous tinged with brown. Fore wing ochreous-white suffused with pale reddish brown; a slight black streak below base of cell; subbasal line represented by double black striæ filled in with whitish from costa and cell, intersecting the black streak; antemedial line double filled in with whitish, waved, angled outwards in submedian fold and inwards on vein 1; claviform large, incompletely defined by black, a whitish patch beyond it on base of vein 2 often defined by black below; orbicular and reniform large, incompletely defined by black, the former oblique elliptical; postmedial line defined by whitish on outer side, dentate, the veins beyond it slightly streaked with black, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line ochreous, with dentate black marks on its inner side at middle, angled outwards at vein 7, dentate to termen at veins 4, 3, and excurved to tornus, the area beyond it tinged with fuscous except

at apex; a terminal series of small black lunules. Hind wing ochreous-white, the veins and terminal area more or less tinged with fuscous; the underside with the costal area irrorated with brown, a slight discoidal lunule and curved postmedial series of points on the veins.

Hab. Britain, I. of Wight; S. France (*Zeller*), Frey & Leech Colls.; N. Italy; Dalmatia; Turkey; S. Russia, Sarepta, Zeller Coll.; Armenia; Asia Minor, Pontus, Bithynia. *Exp.* 36–40 millim.

Larva. Barrett, Lep. Brit. iv. p. 180.

Yellow, with numerous small brown annuli most prominent on dorsal area, some of them forming the dorsal and subdorsal lines; lateral and stigmatal lines yellow, the former edged by brown striæ above; head reddish brown with yellowish points. Food-plants: *Chenopodium*, *Salsola*, and *Mesembryanthemum*.

1254. Polia contigua.

Noctua contigua, Schiff. Wien. Verz. p. 82 (1776); Gmel. ed. Syst. Nat. i. 5, p. 2543 (1788); Vill. Linn. Ent. iv. p. 468 (1789); Hübn. Eur. Schmett., Noct. ff. 85, 609; Dup. Lép. Fr. vi. p. 289, pl. 91. f. 2; Frey, Beitr. i. pl. 16; Steph. Ill. Brit. Ent., Haust. ii. p. 184; Staud. Cat. Lep. pal. p. 157.

Noctua ariæ, Esp. Schmett. iv. pl. 160. f. 8 (1786).

Noctua spartii, Brahm, Ins. ii. p. 323 (1791).

Mamestra subcontigua, Ev. Bull. Mosc. 1852, i. p. 155; 1856, ii. pl. 2. f. 1, iii. p. 19.

Head and thorax purplish-red mixed with grey and black; frons with black bar, tegulæ with black medial line; tarsi with pale rings; abdomen grey mixed with brown, the anal tuft sometimes ochreous. Fore wing grey mixed with brown and fuscous, the medial area tinged with rufous, an olive shade beyond the reniform, the postmedial area greyer; a sinuous black streak below base of cell; a whitish patch at base of costa with the waved subbasal line on it, from costa to submedian fold; a double, waved antemedial line filled in with grey and strongly excurved below the cell; claviform defined by black and with black streak from it to postmedial line; orbicular and reniform defined by black, the former round or oblique elliptical, white and with whitish patch below it, the latter with brown centre and greyish annulus often more or less angled inwards on median nervure; traces of a waved medial line; postmedial line double, the outer line indistinct, minutely dentate and with slight black streaks beyond it on the veins, bent outwards below costa and incurved below vein 4, some pale points beyond it on costa; subterminal line white, slightly defined by brown on inner side, angled outwards at vein 7 and dentate to termen at veins 4, 3, where there are small dentate black marks on its inner side, the area beyond it brown except at apex; a terminal series of small black lunules; cilia intersected with pinkish white. Hind wing white tinged with fuscous brown, especially on the veins and terminal

area; a fine terminal dark line; the cilia white; the underside with the costal area irrorated with brown, a small discoidal spot and sinuous postmedial line.

Ab. 1. *subcontigua*. Darker.—Urals, Ipask.

Hab. Britain, Scotland, England, Leech Coll.; France, Leech Coll.; Germany, Zeller & Frey Colls.; N. Spain; N. Italy; Russia, Urals; Armenia; Siberia, Ussuri; Japan (*Pryer*), 1 ♂. *Exp.* 40 millim.

Larva. Meyr. Brit. Lep. p. 83; Barrett, Lep. Brit. iv. p. 170, pl. 156. f. 1. Dull yellowish green, suffused with orange-ochreous and mottled with reddish brown, above forming dorsal series of V-shaped marks: spiracular line reddish brown. Food-plants: Oak, Birch, *Solidago*, etc. 8–9.

1255. Polia grandis. (Plate LXXX. fig. 30.)

Hadena grandis, Boisd. Gen. et Ind. Meth. p. 120 (1840); Guen. Noct. ii. p. 105, pl. 8. f. 10; Smith, Cat. Noct. N. Am. p. 118.
Xylophasia libera, Wlk. ix. 179 (1856).

Head and thorax red-brown mixed with purplish grey; frons with blackish bar; tegulæ with black medial line; tarsi with pale reddish rings; abdomen grey-brown, the dorsal crests dark at tips, the anal tuft with a fulvous tinge. Fore wing purplish grey largely suffused with bright rufous and dark brown; a sinuous black line below base of cell; traces of a pale curved subbasal line from costa; antemedial line double, oblique, waved; claviform short and broad, defined by black and with black streak from below it to postmedial line; orbicular and reniform with brown centres and grey annuli defined by black, the former round or elliptical, the latter extending to below cell; an indistinct irregularly waved medial line, oblique from costa to below cell where it is angled; postmedial line double, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved, the area beyond it lilacine grey; subterminal line white, defined on inner side by some rufous, with straight inner edge from below costa, some small dentate black marks before it at middle, angled outwards at vein 7 and dentate nearly to termen on veins 4, 3, the area beyond it suffused with black; a terminal series of small black lunules. Hind wing fuscous brown with a yellowish tinge; the cilia whitish with a brown line through them; the underside whitish thickly irrorated with reddish brown, a dark discoidal spot, slightly waved postmedial line, and diffused subterminal band.

Hab. Greenland; Canada; U.S.A., N.E. and Middle States, Maine, New York, Trenton Falls (*Doubleday*), 2 ♂, 1 ♀, type *libera*, Evans Centre (*Grote*), 1 ♂, 1 ♀, Pennsylvania, Wisconsin, Illinois, Minnesota, Colorado. *Exp.* 48 millim.

Larva. (Original.) Head shining red-brown, the reticulations and bands darker, but narrow and broken. Body grey-brown, peppered with black on a whitish and reddish ground, all the markings

obsolete. The substigmatal band shows faintly, broad, pale, its edges whitish; subventral region and feet pale, without the dark dots. Tubercles blackish. Cervical shield darkened, not chitinized.

A general feeder, hiding on the ground.—H. G. D.

1256. Polia w-latinum.

Noctua w-latinum, Hüfn. Berl. Mag. iii. p. 492 (1767); Esp. Schmett. iv. pl. 136. f. 2.
Noctua genistæ, Bork. Eur. Schmett. iv. p. 355 (1792); Scriba, Beitr. iii. p. 241. pl. 15. ff. 13, 14 (1793); Hübn. Eur. Schmett., Noct. ff. 611, 612; Dup. Lép. Fr. vi. p. 285, pl. 91. f. 1; Steph. Ill. Brit. Ent., Haust. ii. p. 183; Staud. Cat. Lep. pal. p. 157.
Phalæna dives, Donov. Brit. Ins. x. p. 71, pl. 352 (1801).
Noctua rectilinea, Hew. Lep. Brit. p. 189 (1809).

Head and thorax grey mixed with purplish brown; frons with black bar; tegulæ with black medial line; tarsi with pale rings; abdomen grey mixed with brown, the dorsal crests with dark tips, the anal tuft tinged with rufous. Fore wing grey-white with slight brown irroration; a sinuous black streak below base of cell with some rufous below it; subbasal line represented by two dark striæ from costa; the antemedial line double, waved, strongly excurved below cell; the medial area suffused with bright rufous from costa to submedian fold; the claviform broad, defined by black and with black streak from it to postmedial line; orbicular and reniform large, greyish defined by black, the former round, the latter with some brown in its lower part; an indistinct irregular medial line oblique from costa to vein 2; postmedial line double, the outer line indistinct, dentate, and produced to slight black streaks interrupted by white points on the veins, bent outwards below costa and incurved below vein 4, some white points beyond it on costa; subterminal line white, slightly defined by rufous on inner side, angled outwards at vein 7 and dentate to termen at veins 4, 3, where there are two small dentate black marks on its inner side, the area beyond it brown except at apex, with black streaks in the interspaces ending in terminal lunules; cilia intersected with white. Hind wing ochreous white suffused with brown, especially towards termen; the cilia ochreous white with a brown line through them; the underside with the costal and terminal areas irrorated with brown and the apex tinged with purplish, a small discoidal spot and sinuous postmedial and subterminal more or less prominent lines.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller & Frey Colls.; Spain; Italy; Scandinavia, Lapland, Leech Coll.; Russia, Livonia, Zeller Coll., Sarepta, Zeller Coll.; Armenia; Persia; W. Siberia, Altai; W. Turkestan, Tarbagatai, Issyk-kul; E. Turkestan, Ili; E. Siberia. *Exp.* 14–16 millim.

Larva. Meyr. Brit. Lep. p. 83; Barrett, Lep. Brit. iv. p. 190, pl. 158. f. 2. Dull brown, sometimes greenish or purple-tinged, dorsal and sub-

dorsal lines dark-edged, indistinct; a dorsal series of darker diamond- and wedge-shaped marks; head marked with black. Food-plants: *Genista*, *Polygonum*, *Stellaria*, etc. 7–9.

1257. Polia invalida. (Plate LXXX. fig. 31.)

Mamestra invalida, Smith, Pr. U.S. Nat. Mus. xiv. p. 225 (1900); id. Cat. Noct. N. Am. p. 119.

♀. Head and thorax grey-white mixed with black; tegulæ with medial black line; patagia with black line near upper edge: tarsi black with pale rings; abdomen grey mixed with black. Fore wing grey-white, thickly irrorated and in places suffused with fuscous; a rather ill-defined black streak below base of cell; subbasal line very indistinct, from costa to submedian fold; antemedial line double, waved; claviform very large and broad, defined by black and with black streak from it to postmedial line; orbicular and reniform large, with white annuli defined by black, the former round: a diffused medial line; postmedial line indistinctly double, somewhat dentate, bent outwards below costa and incurved below vein 4, some white points beyond it on costa and a whitish patch in submedian interspace: subterminal line white, defined on inner side by long dentate black marks and on outer by black streaks in the interspaces, angled outwards at vein 7 and dentate to near termen on veins 4, 3; a terminal series of small black lunules; cilia fuscous intersected with white. Hind wing white nearly evenly suffused with brown, the cilia white; the underside white irrorated with reddish brown, a small discoidal spot and indistinct curved postmedial line.

Hab. U.S.A., Oregon, Portland, Colorado, Glenwood Springs, 1 ♀, California, Placer Co., Sierra Nevada. *Exp.* 42 millim.

Larva. (Original.) Head pale luteous, the reticulations and vertical bands broad, dull brown, concolorous. Body rich red-brown, heavily reticulated on a lighter ground. Dorsal, subdorsal, and broad substigmatal lines pale, whitish, darker-edged, not cut by the heavy oblique subdorsal shades of blackish brown. Of these, the pair on joint 12 are not confluent, being cut by the dorsal line and their square posterior termination is narrow. Cervical shield and anal plate darkened, not chitinized, cut by the pale subdorsal line, but only narrowly so by the dorsal line.

A general feeder.—H. G. D.

1258. Polia thalassina.

Noctua thalassina, Rott. Naturf. ix. p. 119 (1775); Dup. Lép. Fr. vi. p. 292, pl. 91. f. 3; Steph. Ill. Brit. Ent., Haust. ii. p. 182; Staud. Cat. Lep. pal. p. 157.
Noctua humeralis, Haw. Lep. Brit. p. 190 (1809).
Noctua gemina, Hübn. Eur. Schmett., Noct. f. 483 (nec 482).
Noctua achates, Hübn. Eur. Schmett., Noct. f. 610 (1827).

Head and thorax rufous mixed with grey; palpi blackish at sides; frons with black bar; tegulæ with medial black line; abdomen yellowish mixed with brown, the dorsal crests with dark

tips, the anal tuft and ventral surface rufous. Fore wing ochreous grey largely suffused with rufous; a sinuous black streak below base of cell; the subbasal line represented by double black striæ from costa; a double irregularly-waved antemedial line filled in with grey; claviform prominent, defined by black and with a blackish streak from it to postmedial line; orbicular and reniform with brown centres and grey annuli defined by black, the former rounded; an indistinct waved rufous medial line; postmedial line indistinct on costal half, minutely dentate and produced to short black streaks with grey points on them on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line yellowish, defined on inner side by dentate black marks except towards costa and with some black points on outer side, angled outwards at vein 7 and dentate to termen at veins 4 and 3; a terminal series of small black lunules; cilia intersected with whitish. Hind wing ochreous suffused with fuscous brown; a dark terminal line; the cilia yellow; the underside greyish, the costal area irrorated with rufous, a dark discoidal lunule and sinuous postmedial line.

Ab. 1. *achates*. Fore wing more uniform rufous.

Hab. Britain, Scotland, England, Leech Coll.; France, Sand Coll.; Germany, Zeller & Frey Colls.; Spain, Catalonia; Italy; Dalmatia; Scandinavia, Lapland, Leech Coll.; Finland, Leech Coll.; Russia, Livonia, Zeller Coll., St. Petersburg, Zeller Coll., Urals; Armenia; W. Siberia, Altai; W. Turkestan, Issyk-kul; E. Turkestan, Ili; E. Siberia, Kentei, Amurland, Ussuri. *Exp.* 40 millim.

Larva. Meyr. Brit. Lep. p. 84; Barrett, Lep. Brit. iv. p. 173, pl. 156. f. 2.

Pale pinkish brown freckled with dark brown; a double dorsal series of oblique dark marks; dorsal line indistinct; spiracular line pale, edged above by white or black, or wholly black. Food-plants: Birch, *Lonicera*, *Polygonum*, etc. 7–8.

1259. Polia subjuncta. (Plate LXXX. fig. 32.)

Hadena subjuncta, Grote & Rob. Trans. Am. Ent. Soc. ii. p. 198, pl. 3. f. 71 (1868); Smith, Cat. Noct. N. Am. p. 118.

Head and thorax purplish grey mixed with dark brown; palpi blackish at sides; frons with black band; tegulæ with black medial line; abdomen grey-brown, the dorsal crests dark at tips. Fore wing grey-brown with a slight purplish tinge; a sinuous black streak below base of cell with some rufous suffusion above it; antemedial line black, oblique, waved; claviform large, defined by black and with some rufous suffusion below it; orbicular and reniform large, grey, the former round, defined by black except above, the latter defined on inner side and below, its lower part suffused with fuscous, the area beyond it suffused with rufous to apex; postmedial line bent outwards below costa, excurved to vein 4 and indistinct, then black, dentate and incurved; subterminal line pale, with some dentate black marks before it at middle, the one above vein 3 elongate, angled outwards at vein 7 and dentate to termen on veins 4, 3,

the area beyond it rather darker with black streaks in the interspaces. Hind wing whitish tinged with brown, the veins and terminal area suffused with brown, nearly uniformly suffused in female; cilia whitish, with a brown line through them; the underside white, the costal and terminal areas irrorated with brown, a dark discoidal spot and indistinct postmedial line.

Hab. Canada; U.S.A., N., E., & Middle States, 2 ♂, New York, Albany (*Dr. Bailey*), 2 ♀, Ohio, Minnesota, Nebraska, Colorado, Durango (*Oslar*), 2 ♂, 2 ♀, New Mexico. *Exp.* 40–44 millim.

Larva. Head brown, faintly reticulate, the sutures pale. Body greenish, finely marked in brown, forming faint oblique dark subdorsal shades and a short transverse bar on joint 12. Lines obsolete except the substigmatal, which is broad, yellow-edged above, red-filled and diffuse below. Feet pale; spiracles white.—H. G. D.

1260. Polia nevadæ. (Plate LXXXI. fig. 1.)

Mamestra nevadæ, Grote, Bull. Buff. Soc. Nat. Sci. iii. p. 84 (1876); Smith, Cat. Noct. N. Am. p. 118.

Mamestra canadensis, Smith, Pr. U.S. Nat. Mus. x. p. 464 (1887); id. Cat. Noct. N. Am. p. 118.

Head, thorax, and abdomen dark brown mixed with grey; tegulæ with black medial line. Fore wing dark brown with a purplish tinge, some whitish irroration on costa and inner margin; the base of costal area ochreous-white down to the sinuous black streak below base of cell; some rufous suffusion in submedian fold and in discal fold from middle of cell to subterminal line; antemedial line indistinct, oblique, waved, defined by whitish on inner side; claviform small, defined by black; orbicular and reniform whitish, the former moderate, oblique elliptical, defined by black except above, the latter defined by black on inner side, extending to below cell, its lower part suffused with fuscous; postmedial line almost obsolete, dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line white, with small dentate dark marks before it at middle, angled outwards at vein 7 and dentate to termen on veins 4, 3; a terminal series of small black lunules. Hind wing fuscous brown; the cilia whitish with a dark line through them; the underside whitish irrorated with brown, a dark discoidal spot.

Hab. Canada, New Brunswick, Ottawa, 1 ♂, Calgary (*Wolley-Dod*), 1 ♂; U.S.A., California, Sierra Nevada, 1 ♂ type. *Exp.* 40 millim.

Larva. (Original.) Head reddish luteous, reticulations narrow, not prominent, the vertical bands distinct. Body dark brown, reddish-tinted, mottled; subdorsal oblique shades join the broad dark dorsal band, which is widened into an ill-defined open lattice. The pair on joint 12 are confluent, truncate behind. Dorsal and subdorsal lines whitish, broken, the latter reddish-edged below. Substigmatal band broad, white, partly red-filled. Cervical shield and anal plate darkened, not chitinized, the former trilineate in pale.

A general feeder.—H. G. D.

1261. Polia altaica. (Plate LXXXI. fig. 2.)

Hadena altaica, Led. Verh. zool.-bot. Ges. Wien, 1853, pl. 2. f. 6; Staud. Cat. Lep. pal. p. 156.

Head and thorax brown mixed with grey; tegulæ with slight dark medial line; tarsi banded with blackish; abdomen grey-brown. Fore wing grey, more or less strongly suffused and irrorated with brown; a slight blackish streak below base of cell; subbasal line defined by whitish on outer side, curved from costa to submedian fold; antemedial line double, waved, filled in with grey; claviform well-developed, defined by black; orbicular and reniform large, grey defined by black, the former round, with brownish centre, the latter with grey lunule on brown centre; an indistinct curved medial shade; postmedial line double filled in with grey, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved, some white points on costa beyond it; subterminal line white defined by fuscous marks on inner side at discal and submedian folds, dentate, angled outwards at vein 7 and nearly to termen on veins 4, 3; a terminal series of small black lunules; cilia intersected with white. Hind wing pale suffused with brown, the terminal area darker with a pale patch on termen near tornus; a dark terminal line; cilia white; the underside whitish irrorated with brown, a dark discoidal spot, sinuous postmedial line, and diffused subterminal band.

Hab. W. Siberia, Altai, 1 ♂, 1 ♀; W. Turkestan, Ferghana, Issyk-kul: E. Turkestan, Ili; Mongolia; S.E. Siberia, Kentei. *Exp.* 46 millim.

1262. Polia suasa.

Noctua suasa, Schiff. Wien. Verz. p. 83 (1776); Hübn. Eur. Schmett., Noct. f. 426; Dup. Lép. Fr. vii. pl. 101. f. 7.
Noctua dissimilis, Knoch, Beitr. i. pl. 4. ff. 1–4 (1781); Staud. Cat. Lep. pal. p. 157.
Noctua w-latinum, Esp. Schmett. iv. pl. 136. f. 3 (1786), nec Hüfn.
Noctua leucographa, Esp. Schmett. iv. pl. 150. f. 3 (1786).
Noctua dens-canis, Haw. Lep. Brit. p. 190 (1809).
Noctua permixta, Geyer, Schmett. Eur., Noct. f. 803 (1837).
Mamestra aliena, Dup. Lép. Fr. Suppl. iii. p. 323, pl. 30. f. i. (1836).
Mamestra confluens, Ev. Faun. Volg.-Ur. p. 245 (1844).
Hadena pavida, Guen. Noct. ii. p. 101 (1852), nec Boisd.
Mamestra extincta, Staud. Rom. Mém. vi. p. 425 (1892).

♂. Head and thorax brownish grey with a purplish tinge; frons with black bar; tegulæ with black medial line; palpi blackish; tarsi with pale rings; abdomen ochreous or greyish at base, dark brown towards extremity. Fore wing ochreous or grey-brown; a black streak below base of cell; the subbasal line represented by a black striga from costa; antemedial line indistinct, double filled in with grey, excurved in interspaces and angled inwards on the veins; claviform large, defined by black; orbicular and reniform large, defined by black, the former rounded or quadrate, open above; postmedial line double, the outer indistinct,

dentate, bent outwards below costa, excurved to vein 4, then incurved, the veins beyond it with slight black streaks and pale points; subterminal line white or yellowish, indistinct towards costa, angled outwards at vein 7 and dentate to termen on veins 4, 3, some dentate dark marks before it at middle and the area beyond it dark except at apex; a terminal series of blackish lunules; cilia intersected by pale colour. Hind wing ochreous suffused with brown, especially on the veins and terminal area: the underside with the costal area darker, a dark discoidal spot, minutely waved postmedial line, and diffused subterminal line.

♀. Darker and more uniformly coloured.

Ab. 1. *confluens*. Fore wing dark and nearly uniform in colour.

Ab. 2. *extincta*. Dark; fore wing with yellow marks.

Hab. Britain, Scotland, England, Leech Coll.; France, Frey Coll.; Germany, Zeller Coll.; Austria, Frey Coll.; N. Italy; Scandinavia, Lapland, Leech Coll.; Russia, Livonia, Sarepta, Zeller Coll.; Turkey; E. Siberia, Amurland, Ussuri. *Exp.* 40 millim.

Larva. Meyr. Brit. Lep. p. 84; Barrett, Lep. Brit. iv. p. 177, pl. 157. f. 1.

Green or brown dotted with white and freckled with dark grey; dorsal and subdorsal lines darker, variable; spiracular line ochreous yellow edged above with brown or black, below with light reddish. Food-plants: *Rumex*, *Chenopodium*, *Plantago*, etc. 7–8.

1263. Polia aliena.

Noctua aliena, Hübn. Eur. Schmett., Noct. f. 441 (1827); Staud. Cat. Lep. pal. p. 157.

Mamestra amurensis, Staud. Rom. Mém. vi. p. 421 (1892).

Head and thorax dark brown mixed with greyish; frons with dark bar; tegulæ with black medial line; tarsi ringed with white; abdomen grey-brown. Fore wing grey-brown slightly suffused with rufous; a black streak below base of cell; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, more strongly excurved in submedian interspace, the outer line blackish; claviform slightly defined by black, with a pale patch beyond it before the indistinct waved medial line; orbicular and reniform with fuscous centres and greyish annuli, the former round, defined by black, the latter defined on inner side only; postmedial line double filled in with greyish, dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved; subterminal line grey, angled outwards at vein 7 and dentate to near termen on veins 4, 3; the terminal area rather darker; the veins towards termen streaked with black; a terminal series of small black lunules; a fine grey line at base of cilia, which are intersected with grey. Hind wing ochreous suffused with fuscous brown; the inner area paler; the cilia ochreous with a fuscous line through them; the underside grey irrorated with brown, and the terminal area suffused with brown, a small discoidal spot and sinuous postmedial line.

Hab. France, Sand Coll.; Belgium; Germany, Zeller Coll.;

Austria, Frey Coll.; Switzerland; N. Italy; Russia, St. Petersburg; Armenia; W. Siberia, Altai; W. Turkestan, Issyk-kul; E. Turkestan, Ili; E. Siberia, Amurland, Ussuri; Japan, Oiwake (*Pryer*), 1 ♂. *Exp.* 46 millim.

Ab. 1. *amurensis.* Much darker.—E. Siberia, Japan.

Larva. Kirby, Eur. Butt. & Moths, p. 227.

Brownish grey, marbled, the ventral surface greenish yellow, dorsal and subdorsal lines pale. Food-plants: *Trifolium montanum*, *Cytisus nigricans*, *Anthyllis vulneraria*, etc. 7–9.

*1264. Polia passa.

Mamestra passa, Morr. Proc. Bost. Soc. N. H. xvii. p. 139 (1874); Smith, Cat. Noct. N. Am. p. 122.

♀. Head and thorax pale ochreous tinged with reddish and irrorated with fuscous; tegulæ with black medial line; abdomen greyish. Fore wing pale ochreous tinged with rufous and irrorated with fuscous; a black streak below base of cell; the lines indistinct; subbasal line traceable; antemedial line double, curved, waved; claviform large, defined by black; orbicular and reniform large, pale, incompletely defined by black, the former somewhat oblique elliptical, open above, the latter ill-defined below, the area beyond it tinged with reddish; postmedial line almost obsolete on costal half, incurved below vein 4, the area beyond it strongly irrorated with white; subterminal line white, very even, defined on inner side by fuscous, especially towards inner margin. Hind wing fuscous; the underside dull fuscous with darker irroration, a discoidal lunule and curved postmedial line.

Hab. U.S.A., California. *Exp.* 34 millim. This species is unknown to me.

1265. Polia ptochica. (Plate LXXXI. fig. 3.)

Mamestra ptochica, Püng. Iris, xii. p. 104 (1899); Staud. Cat. Lep. pal. p. 158.

♂. Head, thorax, and abdomen white mixed with fuscous; palpi with the second joint fuscous at sides; tarsi with blackish bands. Fore wing grey-white irrorated with fuscous; subbasal line represented by a black striga from costa and two prominent oblique black striæ from cell met by a streak in submedian fold; antemedial line waved; claviform brownish defined by black; orbicular and reniform small, grey defined by black, the former oblique elliptical, the cell before and between them and the area beyond the reniform brownish; traces of an oblique medial line from cell to inner margin; postmedial line minutely dentate, bent outwards below costa and oblique below vein 4, some pale points beyond it on costa; subterminal line defined by fuscous on inner side, angled outwards at vein 7, dentate at veins 4, 3, and angled inwards in submedian fold; a lunulate terminal black line. Hind wing white

suffused with brown especially on terminal area; the underside with the costal and terminal areas irrorated with brown, a small discoidal spot.

Hab. W. Turkestan, Transcaspia, 3 ♂; E. Turkestan, Kungess, 1 ♂, Ili, type † in Coll. Püngeler. *Exp.* 32 millim.

*1266. Polia vau-orbicularis.

Mamestra vau-orbicularis, Smith, Journ. N.Y. Ent. Soc. x. p. 42 (1902); Dyar, Cat. Lep. N. Am. p. 156.

♂. Greyish ochreous-brown with fuscous and black suffusion and irroration; head with the vertex rather darker; tegulæ with a broad medial band; abdomen rather paler. Fore wing with the lines indistinct; subbasal line double, angled outwards on subcostal nervure, an oblique striga just beyond it from cell to vein 1; antemedial line double, oblique, nearly even, the outer part with a more prominent spot at costa; claviform absent; orbicular small, open above and defined by a prominent black **V**-shaped mark; reniform with yellowish annulus defined by black but open above and below, narrow; medial shade broad, diffused, angled at lower angle of cell; postmedial line double, with a series of yellowish points beyond it on the veins, minutely waved, slightly bent outwards below costa and oblique below vein 4; subterminal line yellowish, defined on inner side by a series of black spots, angled outwards at vein 7, then even; a terminal series of small black lunules; cilia yellowish with a fuscous line through them. Hind wing fuscous, rather paler at base; the underside yellowish irrorated with fuscous, a discoidal spot and postmedial line.

Hab. U.S.A., Oregon, Corvallis. *Exp.* 35 millim. This species is unknown to me.

1267. Polia consanguis.

Hadena consanguis, Guen. Noct. ii. p. 97 (1852); Hmpsn. Moths Ind. ii. p. 199; Staud. Cat. Lep. pal. p. 158.
Apamea undicilia, Wlk. ix. 251 (1856).
Hadena languida, Wlk. xv. 1728 (1858).
Mamestra zachii, Bhtsch. Verh. zool.-bot. Ges. Wien, 1879, p. 406.
Hecatara impura, Snell. Midden-Sumatra, Lep. p. 43, pl. 50. f. 5 (1880).
Hadena stolida, Leech, P. Z. S. 1889, p. 509, pl. 4. f. 2.
Apamea cana, Hmpsn. Ill. Het. B. M. viii. p. 79, pl. 165. f. 8 (1891).
Mamestra abbas, Baker, Trans. Ent. Soc. 1894, p. 40, pl. 1. f. 8.

Head and tegulæ grey mixed with rufous; thorax purplish red-brown largely mixed with black; tegulæ with medial black line; tarsi banded with black; abdomen fuscous brown. Fore wing pale ochreous brown thickly irrorated with rufous, the cell and area below and beyond it suffused with fuscous on medial area; the subbasal line represented by black striæ from costa and cell; the antemedial line double, irregularly waved; claviform small, defined by black; orbicular and reniform small, with fuscous centres and pale brownish annuli defined by black, the former round, the latter

slightly angled inwards on median nervure ; postmedial line defined by ochreous on outer side, lunulate, bent outwards below costa, incurved below vein 4, and angled outwards on vein 1, some pale

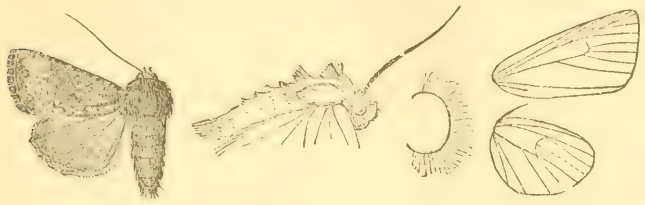


Fig. 23.—*Polia consanguis*, ♂. ½. (From Moths Ind. vol. ii.)

points beyond it on costa ; subterminal line black, angled outwards at veins 7 and 4 ; a terminal series of black points. Hind wing semihyaline whitish, the veins brown, the terminal area suffused with brown ; cilia whitish ; the underside whitish irrorated with brown, a small discoidal spot, a curved postmedial series of short dark streaks on the veins, the area beyond it suffused with brown.

Ab. 1. *languida*. Fore wing browner, uniformly irrorated with black.

Ab. 2. *undicilia*. Fore wing brown irrorated with black, the medial area suffused with black.

Hab. Congo (*Curror*), 1 ♀ type *combinata* ; Egypt ; Sokotra, Homhil, 1 ♀, Adho Dimellus, 1 ♂ (*Grant*) ; Br. E. Africa, Machakos (*Crawshay*), 1 ♀, Naitolia (*Betton*), 1 ♂, Mwani (*Betton*), 1 ♂ ; Mashonaland, Salisbury (*Marshall*), 1 ♂ ; Natal (*Gueinzius*), 1 ♂ type *languida*, Estcourt (*Hutchinson*), 1 ♂, Durban (*Leigh*), 1 ♀ ; Cape Colony, Transkei (*Miss F. Barrett*), 1 ♂ ; Mauritius, Curepipe (*Tullock*), 1 ♂ ; Syria ; Japan, Yokohama (*Pryer*, *Manley*), 5 ♂, 3 ♀, type *stolida* ; W. China, Chang-yang (*Pratt*), 1 ♂ ; Punjab, Sultanpur (*G. Young*), 3 ♂, 1 ♀, Simla (*Harford*), 4 ♂, 2 ♀, Dharmsála (*Hocking*), 8 ♂, 5 ♀ ; Sikhim (*Dungeon*), 2 ♂ ; Nilgiris (*Hampson*), 2 ♂ type *cana* ; Ceylon (*Templeton*, *Green*), 2 ♂ type *undicilia* ; Sumatra ; Queensland, Brisbane (*Turner*), 2 ♂, 1 ♀ ; N. S. Wales, Sydney (*Raynor*), 2 ♂, 1 ♀. *Exp.* 30–40 millim.

1268. **Polia fuscirufa**, n. sp. (Plate LXXXI. fig. 4.)

Head and thorax purplish red-brown slightly mixed with grey and sometimes with some black ; tarsi with pale rings ; abdomen grey-brown. Fore wing dull or bright red-brown, striated with fuscous and irrorated with black ; an indistinct double, waved subbasal line from costa to submedian fold ; a waved antemedial line ; claviform sometimes slightly defined by black ; orbicular and reniform defined by black, the former round, the latter with slight pale annulus ; postmedial line indistinct, minutely dentate, bent outwards below

costa, excurved to vein 4, then incurved, some pale points on costa beyond it; subterminal line indistinct, pale, the area beyond it somewhat darker, slightly angled outwards at vein 7 and excurved at middle; a terminal series of minute black lunules; a fine pale line at base of cilia. Hind wing fuscous brown, the interspaces of basal half pale; the cilia ochreous white, with dark line near base; the underside whitish, the costal and terminal areas irrorated with brown, a small discoidal spot and sinuous postmedial line.

Hab. Br. E. Africa, Athi-ya-Mawe (*Betton*), 1 ♂, Kikuyu (*Crawshay*), 1 ♀, Machakos (*Crawshay*), 1 ♀ type, Quaso (*Betton*), 1 ♀, Eb Urru (*Betton*), 1 ♀; Mashonaland, Salisbury (*Marshall*), 1 ♀. *Exp.* 36–38 millim.

1269. Polia venata, n. sp. (Plate LXXXI. fig. 5.)

♀. Head and thorax bright purplish red mixed with black; tarsi with ochreous rings; abdomen fuscous, the ventral surface and anal tuft mixed with ochreous and rufous. Fore wing bright purplish red mixed with some ochreous and irrorated with black; veins streaked with white; subbasal line defined by ochreous on outer side, oblique, from costa to submedian fold; antemedial line defined by ochreous on inner side, oblique, and angled outwards below costa and above inner margin; claviform defined by black; orbicular and reniform ochreous defined by black with some brown irroration in centre, the former round, the latter with blackish centre and white annulus to lower part; an obscure waved medial line angled at lower angle of cell; postmedial line defined by ochreous on outer side, minutely waved, bent outwards below costa, excurved to vein 4, then oblique, some ochreous points beyond it on costa; subterminal lines formed of ochreous lunules with diffused black marks before them, angled outwards at vein 7 and slightly excurved at middle, a terminal series of small black lunules; cilia fuscous with ochreous lines at base and middle. Hind wing fuscous, the interspaces of basal half ochreous white; cilia ochreous with a fuscous line through them; the underside whitish, the costal and terminal areas tinged with ochreous and thickly irrorated with fuscous, a discoidal lunule, curved postmedial line, and diffused subterminal band.

Hab. Br. E. Africa, Lari (*Betton*), 1 ♀ type. *Exp.* 42 millim.

1270. Polia mortua.

Mamestra mortua, Stgr. Stett. ent. Zeit. 1888, p. 249; id. Rom. Mém. vi. p. 426, pl. 8. f. 1; id. Cat. Lep. pal. p. 156.
Mamestra afra, Græs. Berl. ent. Zeit. 1888, p. 326.
Mamestra nigerrima, Warr. P. Z. S. 1888, p. 302; Hmpsn. Moths Ind. ii. p. 202.
Hadena kala, Swinh. Cat. Het. Mus. Oxon. ii. p. 17 (1900).

Head and thorax black-brown; tarsi with pale rings; abdomen fuscous; the dorsal crests black; the anal tuft of male ochreous. Fore wing black-brown suffused with purplish grey and irrorated

with a few black scales; subbasal line double, waved, from costa to submedian fold; an oblique blackish streak above inner margin before the antemedial line, which is double, waved, and angled outwards above inner margin; claviform moderate, defined by black; orbicular and reniform defined by black, the former round, the latter with ochreous spot on its outer edge at middle and two white points at lower extremity; a medial line oblique from costa to lower angle of cell; postmedial line double towards costa, strongly dentate, oblique from costa to vein 6, excurved to vein 4, then incurved, some whitish points beyond it at costa; subterminal line indistinct, greyish, with some obscure dentate dark marks before it, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing ochreous whitish, suffused with brown, darker on inner area and terminal half; a pale line at base of cilia; the underside yellowish white, the costal and terminal areas suffused and irrorated with fuscous, a slight discoidal spot and curved postmedial line.

Hab. Amurland, Ussuri, 1 ♂, 1 ♀; W. China, Chia-kou-ho (*Pratt*), 1 ♂, Washan (*Pratt*), 1 ♂, Ta-chien-lu (*Pratt*), 2 ♂, Kwei-chou, 1 ♂; Punjab, Simla, 1 ♀, Murree (*Harford*), 1 ♀, Thandiáni (*Yerbury*), 4 ♂, 2 ♀, type *nigerrima*; Tibet, Yatung (*Hobson*), 1 ♂, 2 ♀; Sikhim. *Exp.* 46 millim.

1271. Polia persicariæ.

Noctua persicariæ, Linn. Faun. Suec. p. 319 (1761); Esp. Schmett. iv. pl. 129. ff. 1, 2; Hübn. Samml. Eur. Schmett., Noct. f. 64; Dup. Lép. Fr. vii. pl. 102. f. 4; Steph. Ill. Brit. Ent., Haust. ii. p. 196; Staud. Cat. Lep. pal. p. 156.
Noctua acciptrina, Esp. Schmett. iv. pl. 129. f. 4 (1788).
Mamestra unicolor, Staud. Cat. Lep. pal. p. 91 (1871).

Head and thorax black slightly mixed with brown; tarsi ringed with white; abdomen fuscous mixed with grey, the dorsal crests blackish except the basal one which is rufous. Fore wing black slightly irrorated with brown; the lines double filled in with brownish; the subbasal line waved, from costa to submedian fold; the antemedial line oblique, waved; claviform moderate, defined by black; orbicular and reniform defined by black, the former round, with black point at centre, the latter filled in with white and with some rufous at centre; an indistinct waved, curved medial line; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line represented by a series of dentate black marks with small ochreous spots on them, angled outwards at vein 7 and excurved at middle; a terminal series of black lunules; cilia with a series of white points at base. Hind wing white, the veins and terminal half fuscous; an indistinct pale subterminal line towards tornus. Underside with the costal and terminal areas of both wings tinged with rufous, a discoidal spot and sinuous postmedial line with fuscous band beyond it.

Ab. 1. *acciptrina*. Fore wing with the reniform not filled in with white.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Switzerland, Frey Coll.; N. Italy; Dalmatia; Turkey, Leech Coll.; Armenia; W. Turkestan, Issyk-kul; E. Turkestan, Ili; E. Siberia, Ussuri; Japan, Hakodaté (*Andrews*), 1 ♂, Tokio (*Fenton*), 1 ♂, 1 ♀, Oiwake (*Pryer*), 1 ♀; W. China, Kwei-chow, 1 ♂, Wa-shan (*Pratt*), 1 ♂, Ta-chien-lu (*Pratt*), 1 ♂, Ni-tou, 1 ♂, Wa-ssu-kow, 1 ♀, Omei-shan, 2 ♀, Chia-kou-ho (*Pratt*), 1 ♀. *Exp.* 40–54 millim.

Larva. Meyr. Brit. Lep. p. 86; Barrett, Lep. Brit. iv. p. 214, pl. 160. f. 3. Green to brown; dorsal line whitish, traversing a double series of oblique dark marks, darkest on somites 4 and 5; spiracular line whitish, sometimes edged above with oblique dark marks; 11th somite dorsally humped. Food-plants: *Rumex*, *Pteris*, *Chrysanthemum*, etc. 8–9.

1272. Polia glaucopis, n. sp. (Plate LXXXI. fig. 6.)

♀. Head and thorax black-brown; tegulæ with slight black medial line; tarsi with pale rings; abdomen fuscous brown, the dorsal crests large and dark. Fore wing purplish grey, suffused and thickly irrorated with black; a double black subbasal line from costa to vein 1; antemedial line double, slightly waved, and with prominent rufous patch before it on inner area; claviform defined by black; orbicular and reniform with fuscous centres and defined by black, the former round with greyish annulus, the latter with yellowish annulus; an indistinct slightly waved medial line; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved, the area beyond it purplish grey with whitish patch on inner area; subterminal line whitish, defined on inner side by rufous, angled outwards at vein 7, excurved at middle and tornus; a sinuous black terminal line. Hind wing yellowish suffused with fuscous; cilia yellowish white; the underside whitish tinged with brown, a slight discoidal spot and waved postmedial line.

Hab. Canada, Vancouver I. (*J. J. Walker*), 2 ♀, type. *Exp.* 40–44 millim.

1273. Polia cristifera. (Plate LXXXI. fig. 7.)

Acronycta cristifera, Wlk. xv. 1654 (1858); Smith, Cat. Noct. N. Am. p. 121.
Mamestra lubens, Grote, Trans. Am. Ent. Soc. v. p. 113 (1875).
Mamestra rufula, Morr. Proc. Ac. Nat. Sci. Phil. 1875, p. 62.

Head and thorax black-brown mixed with white; tegulæ with black medial line; patagia edged with black; tarsi ringed with white; abdomen grey-brown, the dorsal crests large and dark. Fore wing purplish grey, more or less strongly suffused with black and irrorated with white especially on costal area; a waved black subbasal line from costa to submedian fold, defined by whitish on

outer side; antemedial line double filled in with grey, oblique, waved; claviform well-developed, defined by black; orbicular and reniform with fuscous centres and grey annuli defined by black, the former round; a curved, irregularly waved, medial line; postmedial line strongly dentate, bent outwards below costa, excurved to vein 4, then incurved, with a grey patch before it in submedian interspace and some pale points on costa; subterminal line represented by a series of small white lunules with dentate black marks on their inner side, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing pale ochreous suffused with fuscous; cilia yellowish white; the underside whitish thickly irrorated with fuscous, a slight discoidal spot and minutely waved postmedial line.

Ab. 1. *lubens*. Fore wing with some rufous on inner area before antemedial line; reniform with white annulus; the postmedial area greyer; the subterminal line continuous and defined by rufous on inner side.

Hab. Canada, Hudson's Bay, St. Martin's Falls (*Barnston*), 1 ♂ type; U.S.A., Maine, New York (*Bailey*), 1 ♂, 2 ♀, type *lubens*, Washington, 1 ♀, Oregon, Colorado. *Exp.* 46–50 millim.

1274. Polia mamestrina.

Epunda mamestrina, Butl. Ill. Het. B. M. vii. p. 59, pl. 128. f. 5 (1889); Hmpsn. Moths Ind. ii. p. 204.

♂. Head and thorax fuscous brown mixed with some grey; antennæ and tarsi ringed with white; abdomen fuscous brown mixed with grey. Fore wing dark grey with a purplish tinge, some pale grey at base; subbasal line double, waved, from costa to vein 1, where it has some yellow scales on it; antemedial line double, irregularly waved; claviform short, broad, defined by black and a few yellow scales; orbicular and reniform large, irregular, defined by black, the former rounded, with fuscous centre and grey annulus, the latter filled in with grey-white except on inner side; an irregularly dentate medial line; postmedial line dentate and produced to streaks on the veins, indistinctly double, bent outwards below costa and strongly incurved below vein 4, some pale points beyond it on costa; subterminal line represented by a series of black and white dentate marks and a prominent curved white mark in submedian fold and produced to termen as streaks in the interspaces, angled outwards at vein 7 and slightly excurved at middle; a terminal series of small black lunules; cilia black, with fine whitish line at base. Hind wing whitish suffused with fuscous brown; cilia whitish with a dark line through them; the underside white irrorated with fuscous, a black discoidal lunule and sinuous postmedial line with darker streaks at the veins.

Hab. Punjab, Dharmsála (*Hocking*), 2 ♂, type. *Exp.* 52 millim.

1275. Polia ingravis. (Plate LXXXI. fig. 8.)

Mamestra ingravis, Smith, Ent. News Philad. vi. p. 337, pl. xv. f. 10 (1895).

Head and thorax black-brown mixed with bluish grey; tegulæ with medial black line; tarsi banded with black; abdomen brown, the dorsal crests with black tips, the ventral surface often tinged with rufous. Fore wing fuscous suffused and irrorated with purplish grey; a black streak below base of cell; subbasal line double, waved, from costa to submedian fold; antemedial line defined by grey on inner side, waved, angled inwards on vein 1; claviform well-developed, greyish defined by black; orbicular and reniform large, with whitish annuli defined by black, the former rounded or elliptical; an indistinct diffused medial line; postmedial line somewhat dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved, the area beyond it purplish grey, the costa brownish with some pale points on it; subterminal line white, defined on inner side by some dentate black marks at middle, angled outwards at vein 7 and dentate at veins 4, 3, the area beyond it darker except at apex; a terminal series of small black lunules; cilia chequered pale and black. Hind wing fuscous brown, the terminal area blackish, the cilia pinkish, white at tips; the underside pinkish white thickly irrorated with dark scales, a slight discoidal spot and sinuous postmedial line.

Hab. Canada, Calgary (*Wolley-Dod*), 6 ♂, 2 ♀, Br. Columbia, Fraser R. (*St. John*), 1 ♀. *Exp.* 38 millim.

*1276. Polia nagaensis. (Plate LXXXI. fig. 9.)

Hadena nagaensis, Hmpsn. Moths Ind. ii. p. 201 (1894).

♀. Head and thorax dark purplish grey; tarsi with pale rings; abdomen dull brown. Fore wing dark purplish grey-brown tinged in parts with fuscous; the costal area tinged with red from antemedial line to near apex; the inner margin with pale ochreous-brown fascia from near base to tornus; subbasal line double, black filled in with grey, waved, from costa to submedian fold, where there is some black suffusion on each side of it; antemedial line double filled in with grey, angled outwards below costa, oblique to vein 4, then incurved and obsolete below vein 1; claviform large, defined by black; orbicular and reniform dark grey, with slight ochreous annuli defined by black, the former rather pear-shaped, the latter large and strongly angled inwards on median nervure, the cell before and between them and the area beyond the reniform suffused with black; postmedial line double at costa, below which it is bent outwards, then indistinct, strongly dentate and oblique below vein 2; subterminal line ochreous, with some ill-defined dentate black marks before it, angled outwards at vein 7 and slightly excurved at middle; a terminal series of small black lunules; a pale line at base of cilia. Hind wing brown with a reddish tinge; cilia white at tips; the underside greyish suffused

with brown, a slight discoidal spot and indistinct curved postmedial line.

Hab. Assam, Nága Hills, 6000 feet (*Doherty*), type † ♀ in Coll. Elwes. *Exp.* 40 millim.

1277. **Polia ferrisparsa.** (Plate LXXXI. fig. 10.)

Hadena ferrisparsa, Hmpsn. Moths Ind. ii. p. 201 (1894).

Head and thorax grey tinged with brown; tegulæ with blackish medial line; patagia edged with black scales above; tarsi black, ringed with grey; abdomen brownish grey, the dorsal crests mixed with black. Fore wing brownish grey, irrorated with black and suffused in parts with fuscous: a pale grey fascia on subcostal nervure from base to postmedial line, the median nervure and base of veins arising from it streaked with grey; subbasal line represented by black striæ from costa and cell, defined by grey on outer side and with slight black streaks below it towards inner margin; antemedial line double filled in with grey, the outer line strong, the inner indistinct, waved; claviform with its extremity defined by black; orbicular and reniform with fuscous centres and ochreous-white annuli defined by black, the former small, rounded, the latter narrow, the cell between them and the area beyond the reniform suffused with black; traces of a waved medial line; postmedial line dentate and produced to white and black points on the veins, bent outwards below costa and incurved below vein 4, some white points on costa beyond it; subterminal line ochreous white, even, prominent, defined on inner side by irregular, diffused, dentate black marks, angled outwards at vein 7 and slightly excurved at middle; a terminal series of small black lunules; cilia intersected with whitish. Hind wing fuscous brown, whitish towards base; the cilia whitish, with fuscous line at base; the underside pale, the costal and terminal areas irrorated with brown, a discoidal lunule and diffused postmedial band.

Hab. Punjab, Kulu Sultanpur (*G. Young*), 1 ♂, Simla (*Harford*), 2 ♂, 2 ♀, type, (*Nurse*) 1 ♀, Dalhousie (*Harford*), 2 ♀. *Exp.* 42 millim.

1278. **Polia costigera.** (Plate LXXXI. fig. 11.)

Agrotis costigera, Moore, P. Z. S. 1881, p. 350; Hmpsn. Moths Ind. ii. p. 200.

Head and thorax grey mixed with brown; palpi blackish at sides; tegulæ with medial black line; patagia edged with some black scales; tarsi with pale rings; abdomen grey-brown. Fore wing purplish grey irrorated with black; the costal area pinkish ochreous to the postmedial line; subbasal line represented by a black striga from costa and two from cell; antemedial line double, waved, oblique, obsolescent on costal area except for a dark point; claviform large, defined by black; orbicular and reniform moderate,

with grey centres and ochreous annuli defined by black, the former round, the latter almost V-shaped; an indistinct waved medial shade except on costal area; postmedial line dentate, bent outwards below costa, incurved at discal fold and strongly below vein 4, some pale points beyond it on costa; subterminal line ochreous, defined on inner side by brown patches on each side of veins 5 and 2 and usually rufous marks above veins 6 and 3, angled outwards at vein 7 and slightly excurved at middle; a terminal series of black lunules; cilia with black line through them and intersected with ochreous. Hind wing ochreous white, the veins and terminal half suffused with brown; cilia ochreous; the underside with the costal and terminal areas irrorated with black, a discoidal spot and sinuous postmedial line.

Hab. Punjab, Kulu, Sultanpur (*G. Young*), 1 ♀, Simla (*Reid*), 1 ♀ type, Dharmsála (*Hocking*), 2 ♂, 6 ♀; Assam, Khásis. *Exp.* 38–42 millim.

1279. Polia mongolica.

Mamestra adjuncta, Staud. Stett. ent. Zeit. 1888, p. 249; id. Rom. Mém. vi. p. 423, pl. 6. f. 8; id. Cat. Lep. pal. p. 155 (nec Boisd.).
Mamestra mongolica, Staud. Iris, ix. p. 253 (1896)

(*adjuncta.*) Head and thorax red-brown, the scales tipped with grey; abdomen pale red-brown. Fore wing red-brown suffused with purplish grey, leaving the cell and area beyond and below it redder; subbasal line indistinct, double, waved from costa to submedian fold; antemedial line double, waved, oblique, bent inwards to inner margin; claviform minute, defined by brown, or obsolete; orbicular and reniform large, greyish, the former round, the latter constricted at middle; an obscure medial shade, oblique from costa to lower angle of cell; postmedial line double filled in with greyish, minutely dentate, bent outwards below costa and incurved below vein 4, some pale points on costa beyond it; subterminal line grey, strongly defined by dark brown on inner side and with the area beyond it rather darker, slightly angled outwards at vein 7, excurved at middle and angled inwards in submedian fold. Hind wing yellowish brown, the terminal area rather darker; cilia white at tips; the underside ochreous, the costal area irrorated with brown, a diffused dark subterminal band.

Ab. 1. *mongolica.* Rather greyer, with the lower part of reniform defined by whitish on outer side.

Hab. W. Turkestan, Issyk-kul; E. Turkestan, Ili: Mongolia, Uliassutai, Urga, 1 ♂; Tibet, Amdo; Amurland, Ussuri, 2 ♂, 3 ♀, Kentei, 1 ♂; Japan, Oiwake (*Pryer*), 4 ♂; Corea: China, Shanghai (*Pryer*), 1 ♀, Chang-yang, 1 ♂. *Exp.* 46–56 millim.

1280. Polia advena.

Noctua advena, Schiff. Wien. Verz. p. 77 (1776); Esp. Schmett. iv. pl. 178. ff. 4, 5; Hübn. Eur. Schmett., Noct. f. 81; Dup. Lép. Fr. vi. p. 392, pl. 96. f. 4; Steph. Ill. Brit. Ent., Haust. iii. p. 28; Staud. Cat. Lep. pal. p. 155.

Noctua nitens, Haw. Lep. Brit. p. 188 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 28.
Noctua unicolor, Tutt, Brit. Noct. iii. p. 71 (1892).

Head and thorax red-brown mixed with grey; tegulæ with black medial line; patagia with some dark scales near upper edge; tarsi with pale rings; abdomen pale reddish brown. Fore wing red-brown, more or less completely suffused with purplish grey, leaving some red in and beyond end of cell; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved; claviform minute or well-developed, defined by brown; orbicular and reniform large, greyish defined by black, the former round, the latter more or less angled inwards on median nervure and with some whitish on lower part of annulus; medial line indistinct, waved, angled outwards to lower angle of cell; postmedial line double, dentate, and produced to grey and black points on the veins, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, some white points beyond it on costa; subterminal line pale, strongly defined by dark brown on inner side, sometimes forming dentate marks especially in submedian fold, angled outwards at vein 7, slightly dentate at veins 4, 3, and strongly angled inwards in submedian fold; a terminal series of small black lunules. Hind wing pale ochreous brown towards base, the terminal half suffused with fuscous; cilia whitish; the underside pale, the costal and terminal areas irrorated with brown, a small discoidal spot and diffused subterminal band.

Ab. 1. *unicolor*. Uniform reddish.

Hab. Britain, Leech Coll; France, Sand Coll.; Germany, Zeller & Frey Colls.; N. Italy; Russia, Livonia, Zeller Coll., Urals; Armenia; W. Turkestan, Ala Tau, Issyk-kul; E. Turkestan, Ili; Siberia; Amurland. *Exp.* 46–64 millim.

Larva. Meyr. Brit. Lep. p. 85; Barrett, Lep. Brit. iv. p. 156, pl. 154. f. 1.

Pale brown; sides darker, freckled with grey; dorsal line pale, brown-edged; spiracles bright red-brown, black-edged. Food-plants: *Sonchus*, *Achillea*, *Polygonum*, etc. 8–4.

1281. Polia tincta.

Noctua tincta, Brahm, Ins. Kal. ii. p. 393 (1791); Dup. Lép. Fr. vi. p. 389, pl. 96. f. 3; Steph. Ill. Brit. Ent., Haust. iii. p. 29; Staud. Cat. Lep. pal. p. 155.
Noctua trimaculosa, Esp. Schmett. iv. pl. 131. f. 5 (1788).
Noctua argentina, Haw. Lep. Brit. p. 186 (1809).
Noctua hepatica, Hübn. Eur. Schmett., Noct. f. 77 (1827).
Mamestra obscurata, Staud. Iris, x. p. 335 (1897).

Head and thorax white mixed with brown, thorax with some rufous on dorsum; frons with black bar; tegulæ with black line at tips; patagia edged with black; tarsi black ringed with white; abdomen grey tinged with reddish brown. Fore wing silvery grey suffused with purplish brown especially on medial area; the lines double, filled in with whitish; the subbasal line waved from costa to

vein 1; antemedial line waved; claviform well-developed, defined by black; orbicular and reniform large, defined by black, the former grey, rather quadrate, the latter with brown centre and grey annulus; a diffused, slightly waved medial line; postmedial line dentate and produced to a double series of points on the veins, bent outwards below costa and incurved below vein 4, some white points on costa beyond it; subterminal line whitish, defined on inner side by dark marks below costa at middle and inner margin, angled outwards at vein 7 and somewhat dentate at veins 4, 3; a terminal series of black lunules. Hind wing almost uniformly suffused with reddish brown, leaving slight white spots on termen at vein 2 and submedian fold; cilia white; the underside white irrorated with brown, a discoidal lunule, curved postmedial line and diffused postmedial band.

Ab. 1. *obscurata*. Smaller and darker.—Amurland.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Austria, Frey Coll.; N. Italy; Russia, Livonia, Zeller Coll., Urals; W. Siberia, Altai; Mongolia, Urga; E. Siberia, Kentei, Amurland. *Exp.* 48–52 millim.

Larva. Meyr. Brit. Lep. p. 85; Barrett, Lep. Brit. iv. p. 160, pl. 154. f. 2.

Pale reddish brown, finely freckled with black and white; dorsal line slender, whitish, black-edged; head brown. Food-plants: Birch, *Vaccinium*, grasses, etc. 9–5.

1282. Polia latex. (Plate LXXXI. fig. 12.)

Aplecta latex, Guen. Noct. ii. p. 78 (1852); Smith, Cat. Noct. N. Am. p. 121.

Apamea demissa, Wlk. xi. 728 (1857).

Head and thorax grey mixed with dark brown and black; frons with black band; tegulæ with black medial line; dorsal crest blackish; tarsi with blackish rings; abdomen grey irrorated with brown, the dorsal crests small and dark. Fore wing grey-white irrorated with brown and black, the veins streaked in places with black; an indistinct waved subbasal line, bent inwards above vein 1, a patch of black suffusion beyond it from costa to median nervure; a double, waved, oblique antemedial line, the inner line indistinct; claviform well-developed, rather indistinctly defined by black; orbicular and reniform large, rather incompletely defined by black, the former rather oblique elliptical, and approximated to the latter, which has its centre defined by brown and is tinged with blood-red on inner side and suffused by a brown shade on inner side of postmedial line, running obliquely from middle of costa to postmedial line at vein 2; an indistinct, oblique, waved medial line from cell to inner margin; postmedial line rather indistinctly double, dentate, and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved; subterminal line defined by the area beyond it being rather darker, angled inwards at discal and submedian folds, outwards at vein 7, and excurved at

middle, and with black streaks beyond it above veins 1, 5, and 6; a terminal series of small black lunules. Hind wing whitish suffused with brown, a waved blackish terminal line; the underside white irrorated with brown, a discoidal lunule and indistinct waved postmedial line.

Hab. Canada (*Norman*), 1 ♂, Orilla (*Bush*), 1 ♂ type *demissa*; U.S.A., N. & E. States, Massachusetts, Beverley, 1 ♂, New York (*Doubleday*), 1 ♂ type, Evan's Centre (*Grote*), 1 ♂, 2 ♀. *Exp.* 42–50 millim.

Larva. Head pale brown, the usual reticulations and vertical bands, besides a large blotch on the face of each lobe, dark brown. Body dead-leaf brown, dotted with darker; joint 2 darkly shaded; intersegmental dorsal dots, slight spots above the subbasal line, which become heavy on joints 12 and 13, of the same dark colour. Subdorsal line obscure, showing a yellowish speck below tubercle ii. A narrow dark brown suprastigmatal line; a narrow dorsal bar on joint 12. Feet coloured like the body.—H. G. D.

*1283. **Polia rogenhoferi.** (Plate LXXXI. fig. 13.)

Mamestra rogenhoferi, Möschl. Stett. ent. Zeit. xxxi. p. 269 (1870); Smith, Cat. Noct. N. Am. p. 114; Staud. Cat. Lep. pal. p. 156.

♂. Head and thorax grey-white mixed with dark brown and black; tegulæ with black medial line; tarsi ringed with white; abdomen fuscous and grey, the dorsal crests blackish. Fore wing grey-white, slightly tinged with fuscous and thickly irrorated with black, the scaling rough; subbasal line represented by double black striæ filled in with white from costa and median nervure; antemedial line double, black filled in with white, angled outwards below costa, bent inwards in cell, then waved; claviform small, defined by black; orbicular and reniform large, whitish defined by black, the former round, the latter with white point on its inner side at lower angle of cell; medial shade strong, oblique from costa to median nervure, then indistinct, waved; postmedial line strongly dentate and produced to black streaks with white points on them on the veins, bent outwards below costa, excurved to vein 4, then oblique, some whitish points beyond it on costa; subterminal line represented by a series of black and white dentate marks, those above and below vein 5 stronger, slightly angled outwards at vein 7 and excurved at middle, connected by diffused fuscous with the terminal series of black lunules. Hind wing whitish irrorated with fuscous brown; a diffused irregular subterminal band and terminal series of black striæ; the underside with black discoidal lunule and sinuous postmedial line showing through to upperside.

Hab. Canada, Labrador, W. Manitoba, in Coll. J. B. Smith. *Exp.* 46 millim.

1284. Polia nebulosa.

Noctua nebulosa, Hüfn. Berl. Mag. iii. p. 418 (1767); Frr. Beitr. pl. 52; Staud. Cat. Lep. pal. p. 156.
Noctua bimaculosa, Esp. Schmett. iv. pl. 132. ff. 1, 2 (1788); Steph. Ill. Brit. Ent., Haust. iii. p. 28.
Noctua thapsi, Brahm, Ins. ii. p. 135 (1791).
Noctua grandis, Donov. Brit. Ins. x. pl. 34. f. 1 (1801).
Noctua plebeia, Hübn. Samml. Eur. Schmett., Noct. f. 78 (1827).
Aplecta askolda, Oberth. Ét. Ent. v. p. 79 (1890).
Aplecta robsoni, Collins, Ent. Rec. ii. p. 264 (1891).
Mamestra lama, Staud. Iris, ix. p. 254 (1896).
Mamestra asiatica, Staud. Iris, x. p. 334 (1897).

Head and thorax white mixed with brown; palpi with blackish patch at sides; tegulæ with black medial line: patagia edged with blackish; tarsi banded with black; abdomen grey-brown, the dorsal crests blackish. Fore wing whitish, irrorated and more or less tinged with brown; subbasal line double, waved, strongly angled inwards in cell, from costa to vein 1, above which there is a slight black streak before it: antemedial line double, irregularly waved, oblique; claviform large, defined by black; orbicular and reniform very large, defined by black, the former rather quadrate, the latter with its inner side rather irregular and its centre defined by brown; traces of a waved medial line; postmedial line double, dentate, and produced to dark points on the veins, bent outwards below costa and incurved below vein 4, some white points beyond it on costa: subterminal line whitish, defined on inner side by a series of dentate dark marks, the one in submedian fold prominent, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of black lunules. Hind wing whitish suffused with brown, especially on terminal area, usually leaving some whitish on termen between veins 6 and 1; a dark terminal line; cilia white; the underside whitish, the costal and terminal areas irrorated with brown, a small discoidal spot, sinuous postmedial line, and diffused subterminal band.

Ab. 1. *robsoni*. Fore wing uniform glossy black.

Ab. 2. *asiatica*. Fore wing dull grey, size somewhat smaller.—C. Asia.

Ab. 3. *ascolda*. Rather browner, a large form.—E. Siberia, Japan.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; N. Italy; Turkey; Russia, Livonia, Zeller Coll.; Armenia; W. Turkestan, Tarbagatai Mts., Issyk-kul, Ala Tau; W. Siberia, Altai; E. Turkestan, Ili; Mongolia, Uliassutai Mts.; Tibet, Amdo; E. Siberia, Kentei, Ussuri; Japan, Yokohama (*Manley*), 2 ♂, 1 ♀, Oiwake (*Pryer*), 3 ♂, 1 ♀; Corea, Kornitoff (*Fletcher*), 1 ♀. *Exp.* 54–60 millim.

Larva. Meyr. Brit. Lep. p. 86; Barrett, Lep. Brit. iv. p. 165, pl. 155. f. 1.

Light brown, darker at sides; dorsal line pale, traversing a series of dark diamond-shaped marks; supraspiracular line indistinct, dark. Food-plants: Birch, willow, elm, etc. 9–5.

1285. Polia nimbosa. (Plate LXXXI. fig. 14.)

Aplecta nimbosa, Guen. Noct. ii. p. 77 (1852); Smith., Cat. Noct. N. Am. p. 114.

Head and thorax white mixed with some brown and black; palpi black towards tips; frons with black bar; tegulæ with black line near tips; patagia edged with black on outer side; tarsi black above towards extremity; abdomen whitish, dorsally tinged with brown or fuscous. Fore wing white irrorated with fuscous and black; an ill-defined waved subbasal line angled inwards in cell and ending at vein 1, the costal area and cell from it to subterminal line tinged with fuscous; antemedial line defined by whitish on inner side, oblique, waved, angled inwards on median nervure and vein 1; claviform short and broad, defined by black; orbicular and reniform large, defined by black, their centres obscurely defined by fuscous, the former round; postmedial line defined by white on outer side, strongly dentate, double at costa, bent outwards below costa and incurved below vein 4, some white points beyond it on costa; subterminal line whitish, defined by an irregularly dentate black line on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of black lunules. Hind wing whitish suffused with brown, leaving the area beyond the sinuous postmedial line paler; a dark terminal line; cilia white; the underside white, with dark discoidal lunule, sinuous postmedial, line, and diffused subterminal band.

Hab. Canada, Br. Columbia; U.S.A., N., E., and Middle States, Trenton Falls (*Doubleday*), 5 ♂, 1 ♀, type, Colorado. *Exp.* 58–62 millim.

1286. Polia mystica. (Plate LXXXI. fig. 15.)

Mamestra mystica, Smith, Ent. News Philad. ix. p. 242 (1898); Dyar, Cat. Lep. N. Am. p. 156.

♂. Head, thorax, and abdomen grey-white mixed with black; frons with black bar; tegulæ with black medial line; patagia edged with black on outer side; tarsi banded with black. Fore wing grey-white, thickly irrorated with black; a rather indistinct waved subbasal line from costa to submedian fold; an irregularly waved antemedial line bent inwards in cell; claviform indistinctly defined by black; orbicular and reniform large, grey defined by black, the former elliptical, somewhat oblique, the latter strongly constricted at middle; postmedial line defined by grey on outer side, dentate, bent outwards below costa, excurved to vein 4, then incurved; the subterminal line whitish, defined by dentate blackish marks on inner side at costa, discal and submedian folds, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of prominent black lunules. Hind wing grey, irrorated and suffused with fuscous; a postmedial fuscous band and the terminal area darker; the cilia white, with a fuscous postmedial line through them; the underside whiter, with fuscous postmedial line and subterminal series of diffused patches.

Hab. Canada, Manitoba, Winnipeg (*Cartwright*), 1 ♂, 1 ♀. Alberta, Calgary (*Wolley-Dod*), 1 ♂. *Exp.* 50 millim.

1287. Polia scotochlora. (Plate LXXXI. fig. 16.)

Polia scotochlora, Koll. Hügel's Kaschmir, iv. p. 482 (1848); Hmpsn. Moths Ind. ii. p. 203.
Polia stevensii, Guen. Noct. ii. p. 38 (1852).

Head and thorax clothed with black and white scales; antennæ and tarsi black, ringed with white; abdomen brownish grey and fuscous. Fore wing grey-white, irrorated with black and tinged with olive-fuscous, especially on medial and terminal areas; subbasal line double, waved, interrupted, from costa to vein 1; antemedial line double, waved, bent inwards in cell; claviform defined by black, its extremity usually indented; orbicular and reniform white defined by black and with some fuscous at centre, both large and with irregular edges, the former somewhat quadrate; a dentate medial line angled outwards on median nervure; postmedial line double filled in with white, dentate, bent outwards below costa and incurved below vein 4, some white points beyond it on costa; subterminal line white, dentate, defined by dentate black marks on inner side, angled outwards at vein 7 and dentate to near termen on veins 4, 3, the area beyond it dark; a terminal series of small quadrate black spots defined by white; cilia chequered black and white. Hind wing pale, suffused with fuscous brown leaving a white patch on termen above tornus; cilia white, with a dark line through them; the underside white irrorated with fuscous, a black discoidal spot and sinuous postmedial line.

Hab. Kashmir; Punjab, Murree (*Harford*), 1 ♂, 2 ♀, Simla, 1 ♀, Dalhousie, 1 ♀, Thundiani (*Yerbury*), 1 ♂, 2 ♀; Sikhim Tibet, Yatong (*Bingham*), 1 ♀. *Exp.* 50–56 millim.

1288. Polia goliath.

Dichona goliath, Oberth. Ét. Ent. v. p. 68, pl. 6. f. 7 (1880); Staud. Cat. Lep. pal. p. 156.

Head and thorax white; palpi with the 2nd joint black at sides; frons with black bar; vertex of head with black marks; tegulæ with black medial line; patagia edged with black; pro-, meso-, and metathorax with black marks; tibiæ and tarsi banded with black; abdomen white, dorsally suffused with fuscous, forming more or less distinct segmental bands, the dorsal crests tipped with black, the anal segment edged with black before the anal tuft. Fore wing white, variegated with pale olive irrorated with black; a black striga from near base of costa and black streak above base of inner margin; subbasal line double, from costa to vein 1, the two parts widely separated, especially in cell, where the inner is angled inwards and the outer outwards; antemedial line double, oblique, angled outwards below costa, then irregularly waved and angled inwards on vein 1; claviform with blackish centre and whitish

annulus more or less completely defined by black; orbicular and reniform large, defined by black, the former with small black spot at centre and incompletely defined above, the latter with large black lunule on inner side and white annulus broken up into small spots below by the veins; a medial black shade on costal area and in cell, then an oblique dentate line; postmedial line double, dentate and produced to points on the veins, bent outwards below costa and incurved below vein 4, some white points beyond it on costa; subterminal line whitish, irregularly waved, defined on inner side by a prominent irregularly dentate black line forming dentate marks below costa and at middle and a double spot in submedian interspace; a terminal series of small black spots and a fine waved line; cilia chequered black and white. Hind wing whitish, more or less tinged with fuscous; slight black streaks on veins 4, 3, 2 beyond middle; a diffused terminal band leaving some white on termen towards tornus; a black terminal line, the cilia white; the underside with the basal half of costal area suffused with fuscous, a large discoidal lunule and slightly waved postmedial line somewhat angled at vein 6.

Hab. E. Siberia, Ussuri; Japan (*Pryer*), 1 ♂; Corea, Gensan (*Ito*), 1 ♂; W. China, Chang-yang (*Pratt*), 1 ♂, 2 ♀, Omei-shan, 2 ♀. *Exp.* 60–70 millim.

1289. **Polia adjuncta.** (Plate LXXXI. fig. 17.)

Chariptera adjuncta. Boisd. Ann. Soc. Ent. Fr. x. p. 243 (1841). non descr. Guen. Noct. i. p. 199 (1852); Smith, Cat. Noct. N. Am. p. 122.

Head and thorax black-brown mixed with pale brown; palpi blackish; frons with black band; tegulæ with black medial line; patagia and vertex of thorax with white patches; tarsi ringed with white; abdomen brown tinged with fuscous, the dorsal crests large and dark. Fore wing olive-grey, the basal, medial, and terminal areas suffused with black; a waved black subbasal line on a white patch and curved inwards above vein 1; a double, oblique, waved antemedial line partly filled in with white; claviform moderate, defined by black; orbicular and reniform white, with olive-brown centres and rather irregular black outlines, the former somewhat quadrate; a curved dentate medial line; postmedial line double, dentate and produced to white points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line dentate, white defined by black on inner side, angled inwards at discal and submedian folds, outwards at vein 7, and excurved at middle; a terminal series of small black lunules with white before them; cilia chequered black and white. Hind wing yellowish white, more or less strongly suffused with fuscous brown, especially on terminal area, a dark lunulate terminal line; the underside white irrorated with brown, a dark discoidal lunule and sinuous postmedial line.

Hab. Canada; U.S.A., N., E., and Middle States, 2 ♂, 3 ♀, type

Illinois, Minnesota, Missouri, Kansas, 1 ♂ (*Snow*). *Exp.* 40–44 millim.

Larva. Head luteous, reticulate and banded with brown. Body robust, joint 12 enlarged; soft olivaceous green, dorsal and subdorsal lines pale, obscure; dark green oblique patches on joints 5, 6, and 12, on the latter broadening below over subdorsal region. Oblique lines indicated on the other segments. Faint reversed dark shades subventrally, forming a band on thorax, edged above by the elsewhere obsolete white substigmatal line. Cervical shield dark, with three white lines.—H. G. D.

*1290. Polia dilatata. (Plate LXXXVI. fig. 9.)

Mamestra dilatata, Smith, Proc. U.S. Nat. Mus. xxii. p. 464 (1900); Dyar, Cat. Lep. N. Am. p. 156.

♀. Head yellowish, with grey tuft between antennæ; tegulæ white, with broad black medial line and fuscous tips; patagia white, mixed with black and olive scales and edged with black; abdomen brownish grey. Fore wing white, mixed with fuscous, yellowish, olive, and black scales; the costal half of basal area white, the inner half grey; subbasal line double, black, interrupted in cell, its outer side below the cell forming an oblique mark defining the white area; antemedial line double, black filled in with white, oblique towards costa and angled inwards on vein 1; claviform small, with white centre defined by black; orbicular small, round, with white centre defined by black; reniform well developed, with grey centre and white annulus defined by black; medial shade only traceable at costa and inner margin; postmedial line double, black filled in with white, minutely waved, bent outwards below costa and oblique below vein 4; subterminal line white, interrupted, irregular, defined on inner side by a fuscous patch at costa and somewhat dentate marks at middle, and by some fuscous on outer side, angled outwards at vein 7 and excurved at middle; cilia white, with series of black lunules at base and olive lunules at tips. Hind wing fuscous brown, paler at base; cilia white, with fuscous line through them on costal half; the underside whitish, the costal area irrorated with fuscous, a discoidal lunule and broad postmedial line.

Hab. U.S.A., New Mexico. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

*1291. Polia variolata. (Plate LXXXVI. fig. 10.)

Mamestra variolata, Smith, Pr. U.S. Nat. Mus. x. p. 467 (1887); id. Cat. Noct. N. Am. p. 122.

♂. Head and thorax yellowish tinged with olive, the patagia and thorax with white blotches, the tegulæ with black medial line; abdomen brownish grey. Fore wing grey, tinged with ochreous and olive-brown; costal half of basal area with the basal half white, the outer black, the white area traversed by the dark

double subbasal line; antemedial line double filled in with white, irregularly waved; claviform indistinctly defined, with a white patch beyond it at base of vein 2; orbicular large, white, irregular; reniform narrow, with ochreous centre and white annulus defined by black; medial shade represented by two black lunules on inner area; postmedial line indistinctly double filled in with white, minutely waved, bent outwards below costa, excurved to vein 4, then oblique; subterminal line white, defined on inner side by a dark patch at costa and some spots at middle, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of black lunules; cilia intersected with white. Hind wing fuscous; the underside with darker irroration, a discoidal lunule and broad postmedial line.

Hab. U.S.A., Washington. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

*1292. Polia glaciata. (Plate LXXXVI. fig. 11.)

Mamestra glaciata, Grote, Can. Ent. xiv. p. 170 (1882); Smith, Cat. Noct. N. Am. p. 122.

♂. Head and thorax fuscous brown mottled with white; abdomen grey-brown. Fore wing grey, suffused with fuscous and olive-brown and irrorated with white; the lines distinct, double filled in with white; subbasal line represented by double striæ from costa and median nervure; antemedial line rather oblique, waved, angled outwards on vein 1; claviform defined by black and followed by a white spot; orbicular and reniform large, with brown centres and white annuli defined by black, the former somewhat elliptical; a distinct waved medial line; postmedial line minutely dentate, bent outwards below costa, excurved to vein 4, then incurved and angled outwards on vein 1; subterminal line white, defined on each side by blackish, slightly angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of black lunules; cilia chequered fuscous and whitish. Hind wing fuscous brown, with dark terminal line; the underside pale irrorated with fuscous, a discoidal lunule and broad postmedial line.

Hab. U.S.A., Colorado, Arizona. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in Brooklyn Inst. Arts and Sciences.

B. Prothorax with spreading crest.

a. Abdomen of female with the extremity blunt, the ovipositor not exserted.

*a*¹. Fore legs of male with thick tufts of long hair, the tarsal joints fringed with long scales.

1293. Polia pennitarsis.

Hadena pennitarsis, Wlk. xv. 1726 (1858).

♂. Head and thorax clothed with red-brown, sap-green, and black

scales; pectus rufous; legs blackish, the tarsi with white rings; abdomen fuscous brown, the anal tuft ochreous, the ventral surface rufous. Fore wing dark reddish brown, suffused in parts with sap-green; the base green; subbasal line double filled in with green, waved, from costa to submedian fold; antemedial line double filled in with green, incurved in cell and angled outwards above inner margin; claviform short and broad, dark brown defined by black; orbicular and reniform with brown centres and green annuli defined by black, the former round, the latter constricted at middle and expanding below; postmedial line indistinct, dentate, slightly bent

Fig. 24.—*Polia pennitarsis*, ♂. ½.

outwards below costa, excurved to vein 4, then incurved, some green points beyond it on costa; subterminal line green, defined by dark brown suffusion on inner side and narrowly edged by black on outer, minutely and irregularly waved, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia green and brown. Hind wing with the basal half brownish white, the terminal half dark reddish brown; cilia ochreous white, with a fuscous line through them; the underside with the basal area pale irrorated with red-brown, the terminal area red-brown, a dark discoidal spot and sinuous postmedial line.

Hab. Brazil, Rio Janeiro, 1 ♂. *Exp.* 36 millim. Type † ♂ in Mus. Oxon.

b^1. Legs of male normal.
  a^2. Fore wing with the subterminal line dentate on veins 4, 3 and forming a distinct ≷-mark.
    a^3. Fore wing with pale dentate mark on base of vein 2.
      a^4. Fore wing with black streak below base of cell.
        a^5. Fore wing with the antemedial line not angled outwards above inner margin ..... *pradita*.
        b^5. Fore wing with the antemedial line strongly angled outwards above inner margin ..... *prodeniformis*.

b^4. Fore wing without black streak below base of cell.
a^5. Fore wing with the postmedial line incurved between veins 5 and 2.
a^6. Fore wing with the orbicular small, narrow, oblique elliptical ..... *furcula.*
b^6. Fore wing with the orbicular well-developed.
a^7. Fore wing with the orbicular rounded ..... *eversmanni.*
b^7. Fore wing with the orbicular oblique elliptical. *schneideri.*
b^5. Fore wing with the postmedial line oblique waved below vein 5.
a^6. Fore wing with the postmedial area tinged with purplish.
a^7. Fore wing with the antemedial line very strongly angled outwards above inner margin. *perdentata.*
b^7. Fore wing with the postmedial line slightly angled outwards above inner margin.
a^8. Fore wing with white annulus to orbicular.
a^9. Fore wing strongly tinged with purplish red ..... *furuhjelmi.*
b^9. Fore wing not tinged with purplish red..... *furca.*
b^8. Fore wing with the orbicular pinkish ..... *suavis.*
b^6. Fore wing with the postmedial area whitish ... *liquida.*
b^3. Fore wing without pale dentate mark on base of vein 2.
a^4. Fore wing with black streak below base of cell.
a^5. Fore wing dark purplish grey-brown..... *radix.*
b^5. Fore wing pale purplish grey-brown ..... *altaistica.*
c^5. Fore wing grey largely suffused with dark brown. *vidua.*
d^5. Fore wing purplish grey ..... *splendens.*
b^4. Fore wing without black streak below base of cell.
a^5. Fore wing purplish red.
a^6. Fore wing without dentate white mark on subterminal line above tornus ..... *oleracea.*
b^6. Fore wing with dentate white mark on subterminal line above tornus ..... *pisi.*
b^5. Fore wing purplish grey with some red suffusion. *tacoma.*
c^5. Fore wing fuscous brown.
a^6. Fore wing with the orbicular and reniform prominently defined by black, the postmedial line dentate below vein 4 ..... *satanella.*
b^6. Fore wing with the orbicular and reniform ill-defined, the postmedial line strongly incurved and not dentate below vein 4 ..... *quadrata.*
d^5. Fore wing ochreous grey tinged with rufous..... *sofia.*
b^2. Fore wing with the subterminal line not forming a distinct ≷-mark.
a^3. Fore wing with the reniform large, kidney-shaped.
a^4. Abdomen without pink lateral stripes.
a^5. Fore wing with the ground-colour purplish grey.
a^6. Fore wing with the ante- and postmedial lines connected by a more or less prominent black streak in submedian fold.
a^7. Fore wing with pale dentate mark on base of vein 2.
a^8. Fore wing strongly irrorated with brown ... *subroseata.*
b^8. Fore wing not strongly irrorated with brown. *denticulata.*
b^7. Fore wing without pale dentate mark on base of vein 2.
a^8. Head and tegulæ not white.
a^9. Fore wing with the claviform defined by black.

a^{10}. Fore wing without black streak in submedian fold from subterminal line to termen.
a^{11}. Fore wing without black streak in submedian fold between postmedial and subterminal lines.
a^{12}. Fore wing with dentate black marks before subterminal line ..... *glauca.*
b^{12}. Fore wing without dentate black marks before subterminal line ..... *gasiva.*
b^{11}. Fore wing with black streak in submedian fold between postmedial and subterminal lines ..... *paranica.*
b^{10}. Fore wing with black streak in submedian fold from subterminal line to termen.
a^{11}. Hind wing of male wholly tinged with brown ..... *cuneata.*
b^{11}. Hind wing of male white, the terminal area suffused with brown.
a^{12}. Fore wing without dentate black marks before subterminal line ..... *anguina.*
b^{12}. Fore wing with dentate black marks before subterminal line.
a^{13}. Fore wing moderately broad; reniform extending well below cell ..... *vicina.*
b^{13}. Fore wing narrow; reniform extending slightly below cell ..... *pensilis.*
b^{9}. Fore wing with the claviform forming part of the black streak ..... *segregata.*
b^{8}. Head and tegulæ white ..... *cnivetti.*
b^{6}. Fore wing with the ante- and postmedial lines not connected by a black streak in submedian fold.
a^{7}. Fore wing with lunulate white mark beyond the claviform ..... *albomarginata.*
b^{7}. Fore wing without lunulate white mark beyond the claviform.
a^{8}. Fore wing with pale dentate mark on base of vein 2 ..... *mista.*
b^{8}. Fore wing without pale dentate mark on base of vein 2.
a^{9}. Fore wing with some yellowish in submedian fold at base and beyond claviform ..... *mutilata.*
b^{9}. Fore wing without yellowish in submedian fold.
a^{10}. Fore wing with the claviform small, acute at extremity.
a^{11}. Fore wing wholly suffused with red-brown ..... *beani.*
b^{11}. Fore wing with the costal area, cell, and terminal area suffused with red-brown.
a^{12}. Fore wing with the orbicular large ..... *legitima.*
b^{12}. Fore wing with the orbicular small ..... *dodi.*
b^{10}. Fore wing with the claviform large, rounded at extremity.
a^{11}. Fore wing without prominent white annuli to stigmata.
a^{12}. Fore wing with the claviform not filled in with blackish ..... *lilacina.*
b^{12}. Fore wing with the claviform filled in with blackish ..... *illoba.*

b^{11}. Fore wing with prominent white annuli to stigmata ..... *dictyota.*

b^5. Fore wing with the ground-colour dull brown to black or reddish brown.

a^6. Hind wing more or less completely tinged with brown.

a^7. Fore wing with the medial area concolorous or slightly darker.

a^8. Fore wing with the inner postmedial area concolorous.

a^9. Fore wing without pale patch on subterminal line in submedian fold.

a^{10}. Fore wing with the stigmata not filled in with black.

a^{11}. Fore wing with the claviform present.

a^{12}. Fore wing with the reniform angled inwards on median nervure ..... *calbertai.*

b^{12}. Fore wing with the reniform concave towards base ..... *gavisa.*

c^{12}. Fore wing with the reniform convex towards base.

a^{13}. Fore wing with the subterminal line greyish, indistinct.

a^{14}. Hind wing not reddish brown.

a^{15}. Fore wing dull grey-brown ..... *goodelli.*

b^{15}. Fore wing black-brown ..... *sadales.*

b^{14}. Hind wing reddish brown..... *chalcia.*

b^{13}. Fore wing with the subterminal line prominent, white ..... *ectypa.*

b^{11}. Fore wing with the claviform absent.

a^{12}. Fore wing dull brown.

a^{13}. Fore wing with the reniform pale, without white points on its lower edge.

a^{14}. Fore wing with dentate black marks before subterminal line ..... *norercu.*

b^{14}. Fore wing without dentate black marks before subterminal line..... *bolteri.*

b^{13}. Fore wing with the reniform fuscous with pale points on its outer edge ... *mania.*

b^{12}. Fore wing black-brown.

a^{13}. Fore wing with the subterminal line white, interrupted ..... *obscura.*

b^{13}. Fore wing with the subterminal line ochreous, concolorous..... *mœrens.*

b^{10}. Fore wing with the stigmata filled in with black ..... *atricana.*

b^9. Fore wing with pale patch on subterminal line in submedian fold.

a^{10}. Fore wing with the patch on subterminal line white ..... *assimilis.*

b^{10}. Fore wing with the patch on subterminal line ochreous.

a^{11}. Fore wing with white points on outer edge of reniform ..... *aya.*

b^{11}. Fore wing with white lunule on outer edge of reniform ..... *nervina.*

b^8. Fore wing with more or less distinct pale patch on inner postmedial area.

a^9. Fore wing with the orbicular round.

a^{10}. Fore wing with grey annuli to the stigmata ..... *pannosa.*

b^{10}. Fore wing without grey annuli to the stigmata ..... *diptcryyidia.*
b^{6}. Fore wing with the orbicular represented by a slight ochreous streak ..... *xanthosoma.*
b^{7}. Fore wing with the medial area whitish ..... *mesoplanca.*
b^{5}. Hind wing pure white, the terminal area more or less tinged with fuscous in female.
a^{7}. Fore wing with the reniform filled in with white ..... *signi.*
b^{7}. Fore wing with the reniform not filled in with white.
a^{8}. Fore wing with the subterminal line incurved at discal fold.
a^{9}. Fore wing not striated with fuscous ..... *cupresens.*
b^{9}. Fore wing striated with fuscous ..... *mesomelana.*
b^{8}. Fore wing with the subterminal line not incurved at discal fold ..... *furcilinea.*
c^{3}. Fore wing with the ground-colour ochreous brown.
a^{4}. Fore wing with dentate black marks before subterminal line.
a^{7}. Fore wing with dark marks on terminal area beyond subterminal line ..... *magellana.*
b^{7}. Fore wing with the terminal area pale, without dark marks beyond subterminal line ..... *luhrani.*
b^{4}. Fore wing without dentate black marks before subterminal line.
a^{7}. Fore wing with slight pale streaks in discal and submedian folds ..... *densa.*
b^{7}. Fore wing without pale streaks in discal and submedian folds ..... *stretchi.*
d^{3}. Fore wing with the ground-colour whitish.
a^{6}. Hind wing whitish, the terminal area suffused with fuscous.
a^{7}. Fore wing not suffused with green.
a^{8}. Fore wing with diffused medial shade ..... *palilis.*
b^{8}. Fore wing with the medial area from costa to median nervure darker than ground-colour ..... *longiclava.*
c^{8}. Fore wing with the whole medial area darker than ground-colour.
a^{9}. Fore wing with the ground-colour almost pure white.
a^{10}. Fore wing without medial line.
a^{11}. Fore wing with prominent white streak above vein 5, arising from reniform ..... *doira.*
b^{11}. Fore wing without prominent white streak above vein 5 arising from reniform ..... *stenotis.*
b^{10}. Fore wing with waved medial line ..... *cappa.*
b^{9}. Fore wing with the ground-colour grey-white.
a^{10}. Fore wing with yellow markings on reniform and subterminal line ..... *dysodea.*
b^{10}. Fore wing without yellow markings on reniform and subterminal line.
a^{11}. Fore wing with the claviform elongate... *maderæ.*
b^{11}. Fore wing with the claviform short ..... *serena.*
b^{7}. Fore wing largely suffused with green.
a^{8}. Fore wing with the medial area not darker than the ground-colour.

a^6. Fore wing with the stigmata not defined by black ..... *olivocincta.*
b^6. Fore wing with the stigmata defined by black ..... *marca.*
b^5. Fore wing with the medial area darker than the ground-colour ..... *subjecta.*
b^6. Hind wing wholly fuscous ..... *confusa.*
c^5. Fore wing with the ground-colour green ..... *psittacea.*
b^4. Abdomen with pink lateral stripes ..... *pictula.*
b^3. Fore wing with the reniform small, narrow, and usually more or less angled inwards on median nervure, rarely absent or represented by a black lunule.
a^4. Hind wing not bright yellow.
a^5. Fore wing with the postmedial line incurved or oblique from vein 5 to inner margin.
a^6. Fore wing with the extremity of median nervure streaked with white ..... *spiculosa.*
b^6. Fore wing with the extremity of median nervure not streaked with white.
a^7. Hind wing of male white, the terminal area suffused with fuscous ..... *renigera.*
b^7. Hind wing of male wholly tinged with fuscous.
a^8. Fore wing reddish brown, the postmedial area pale rufous.
a^9. Fore wing with prominent white annulus to reniform.
a^{10}. Fore wing pale rufous to fuscous brown... *stricta.*
b^{10}. Fore wing bright brown ..... *ferrealis.*
b^9. Fore wing without white annulus to reniform ..... *lacca.*
b^8. Fore wing grey more or less suffused with fuscous black, especially on medial area.
a^9. Fore wing with the ante- and postmedial lines separate at inner margin; stigmata well developed ..... *olivacea.*
b^9. Fore wing with the ante- and postmedial lines almost touching at inner margin; stigmata almost obsolete ..... *cau-nubila.*
c^8. Fore wing fuscous brown with some ochreous on postmedial area ..... *subpicta.*
b^5. Fore wing with the postmedial line incurved or oblique from vein 4 to inner margin.
a^6. Hind wing white, the termen more or less tinged with fuscous, especially in female.
a^7. Fore wing with the ground-colour white tinged with green or ochreous.
a^8. Fore wing with the reniform represented by a black lunule ..... *poliastis.*
b^8. Fore wing with the reniform white ..... *laudabilis.*
b^7. Fore wing with the ground-colour white not tinged with green or ochreous ..... *marmica.*
c^7. Fore wing with the ground-colour grey-white.
a^8. Fore wing with the ante- and postmedial lines approximated on inner margin.
a^9. Fore wing with the antemedial line very oblique ..... *quadrilinea* Grt.
b^9. Fore wing with the antemedial line nearly erect ..... *rectilinea.*

b^8. Fore wing with the ante- and postmedial lines not approximated on inner margin.
a^9. Fore wing not suffused with black.
a^{10}. Fore wing with the lines double.
a^{11}. Fore wing tinged with olive and with black streak above tornus ..... *incurva.*
b^{11}. Fore wing not tinged with olive and without black streak above tornus ..... *intentata.*
b^{10}. Fore wing with the lines single ..... *cana.*
b^9. Fore wing suffused with black on medial area ..... *hudera.*
c^9. Fore wing almost wholly suffused with black ..... *albaquetata.*
c^7. Fore wing with the ground-colour reddish brown mixed with grey ..... *erecta.*
c^7. Fore wing with the ground colour fuscous grey with yellow streaks in discal and submedian folds ..... *datis.*
b^6. Hind wing yellowish, the terminal area suffused with fuscous ..... *rugosa.*
c^6. Hind wing wholly tinged with fuscous.
a^7. Fore wing with the ground-colour grey more or less tinged with green ..... *marinitincta.*
b^7. Fore wing grey, the medial area brown.
a^8. Fore wing with the orbicular and reniform present ..... *mediana.*
b^8. Fore wing with the orbicular and reniform absent ..... *fasciata.*
c^7. Fore wing whitish suffused with rosy pink ... *roseosuffusa.*
d^7. Fore wing with the ground-colour purplish or dark brown ..... *renisigna.*
e^7. Fore wing fuscous brown with white spots.
a^8. Fore wing tinged with green; the reniform angled inwards on median nervure ..... *goniophora.*
b^8. Fore wing not tinged with green, the reniform not angled inwards on median nervure. *rudis.*
c^5. Fore wing with the postmedial line excurved from vein 3 to inner margin ..... *esopis.*
b^4. Hind wing bright yellow.
a^5. Hind wing with the terminal band rather narrow and not expanding on apical area..... *bohemanni.*
b^5. Hind wing with the terminal band broad and expanding on apical area ..... *secedens.*

1294. Polia prædita.

Noctua prædita, Hübn. Eur. Schmett., Noct. f. 595 (1827); Led. Ann. Soc. Ent. Belge, xiii. pl. 1. f. 11 (1870); Staud. Cat. Lep. pal. p. 160.

Head, thorax, and abdomen grey slightly tinged with fuscous. Fore wing grey, the antemedial and medial areas tinged with fuscous except towards costa and inner margin; a black streak below base of cell; subbasal line absent; antemedial line defined by white on outer side, oblique from costa to submedian fold, then nearly erect; claviform almost obsolete, a dentate whitish mark beyond it on base of vein 2; orbicular and reniform with brownish centres and white annuli defined by black, the former oblique elliptical, open above; the median nervure and veins rising from it

defined by fine white streaks; terminal area brown except at apex, extending to inner side of the subterminal line which is white, angled outwards at vein 7 and dentate to termen on veins 4, 3. Hind wing whitish tinged with brown, the terminal area suffused with fuscous; the underside white, the costal and terminal areas irrorated with brown, a small discoidal spot and sinuous punctiform postmedial line.

Hab. S.E. Russia, Sarepta, 2 ♂, Zeller Coll.; Armenia: W. Turkestan, Ferghana, Issyk-kul: E. Turkestan, Khashgar; Kashmir, Nubra (*McArthur*), 2 ♂. *Exp.* 34 millim.

*1295. Polia prodeniformis. (Plate LXXXI. fig. 18.)

Mamestra prodeniformis, Smith, Proc. U.S. Nat. Mus. x. p. 464 (1887); Smith, Cat. Noct. N. Am. p. 117.

♀. Head and thorax dark brown mixed with grey and black; tegulæ with black medial line; abdomen reddish brown, the ventral surface whitish irrorated with brown. Fore wing whitish with a slight violaceous tinge, suffused in parts with reddish brown and fuscous, especially on medial area and costal area before subterminal line; a black streak below base of cell interrupted by the black-edged white striga representing the subbasal line, with a whitish patch beyond it outwardly edged by black; antemedial line double, black filled in with white, obsolete on costal area, angled inwards on vein 1, then very strongly outward above inner margin; claviform large, defined by black, a dentate whitish mark beyond it on vein 2; orbicular and reniform with white annuli defined by black, the former oblique elliptical, open above and forming a U-shaped mark with its arms produced outwards above, the latter with its outer part tinged with pale rufous and its lower with black; an indistinct medial line obliquely incurved from costa to below end of cell, then dentate; postmedial line indistinctly double, bent outwards below costa, incurved at discal fold and below vein 5, slightly excurved below vein 2; subterminal line white, defined on inner side by irregular dentate black marks, angled outwards at vein 7 and dentate to termen on veins 4, 3, the area beyond it suffused with black except at apex; a terminal series of small black lunules; cilia fuscous and whitish. Hind wing white, the veins and terminal area suffused with fuscous; the underside with the costal and terminal areas irrorated with brown.

Hab. U.S.A., New Mexico, Hot Springs, in coll. J. B. Smith. *Exp.* 34 millim.

1296. Polia furcula. (Plate LXXXI. fig. 19.)

Mamestra furcula, Staud. Stett. ent. Zeit. 1889, p. 36; id. Cat. Lep. pal. p. 169.

Head and thorax grey mixed with brown and fuscous; tegulæ with two more or less prominent black lines; patagia with some

black scales on upper edge; abdomen grey mixed with fuscous. Fore wing grey with a violaceous tinge and slight brown suffusion, the medial area brown except towards costa and inner margin; subbasal line represented by double black striæ from costa and cell filled in with white; antemedial line double filled in with white, waved from costa to vein 1, then strongly angled outwards, sometimes almost to postmedial line; claviform large, brown defined by black, acute at extremity, a bidentate white mark above it on vein 2; orbicular and reniform small, defined by black, the former oblique elliptical, white with slight brown centre, the latter brown with slight white annulus; postmedial line defined by white on outer side, angled outwards below costa and sharply at vein 5, then incurved and angled on veins 2 and 1; subterminal line white, defined on inner side by dentate black marks below costa and at middle, angled outwards at vein 7 and dentate to termen at veins 4, 3, the area beyond it suffused with brown; a terminal series of small black lunules; cilia intersected with white. Hind wing white; the veins, base, and inner area suffused with brown; a broad terminal fuscous-brown band; cilia white; the underside sparsely irrorated with brown, a small discoidal lunule, crenulate postmedial line, and diffused subterminal band.

Hab. W. Turkestan, Issyk-kul, 1 ♂, 1 ♀; E. Turkestan, Ili; Kashmir, Kardong, 14,000′ (*McArthur*), 4 ♂, Digha Pass, 15,000′ (*McArthur*), 4 ♂. *Exp.* 30 millim.

*1297. Polia eversmanni. (Plate LXXXI. fig. 20.)

Mamestra eversmanni, Staud. Iris, xii. p. 367, pl. 6. f. 14 (1900); id. Cat. Lep. pal. p. 160.

♀. Head and thorax grey tinged with fulvous and mixed with some black scales; tarsi blackish, with pale rings; abdomen whitish tinged with fuscous, the anal tuft with ochreous. Fore wing grey, tinged with purplish and suffused with brown, especially on medial and terminal areas; subbasal line double, dentate, from costa to vein 1; antemedial line double, irregularly waved, from costa to submedian fold, angled inwards on vein 1 and more strongly outwards above inner margin; claviform large, fuscous brown defined by black, acute at extremity, a prominent bidentate whitish mark beyond it on base of vein 2; orbicular and reniform moderate, defined by black, the former rounded, whitish with brown centre, the latter greyish with whitish annulus; a medial line oblique from costa to vein 2, then dentate; a double postmedial line, bent outwards below costa, incurved at discal fold, incurved between veins 5 and 2 and at inner margin; subterminal line yellowish white, defined on inner side by dentate black marks below costa and at middle, angled outwards at vein 7, dentate to termen at veins 4, 3, and bent outwards to tornus; a terminal series of black lunules; cilia brown intersected with white. Hind wing pure white, the veins, basal and inner areas suffused with fuscous; the terminal

area black; the cilia white; underside white, the costal area irrorated with black, a discoidal point, the terminal area black.

Hab. E. Turkestan, Korla, in Coll. Püngeler. *Exp.* 40 millim.

1298. **Polia schneideri.** (Plate LXXXI. fig. 21.)

Mamestra schneideri, Staud. Iris, xii. p. 368 (1900); id. Cat. Lep. pal. p. 160.

Head, thorax, and abdomen grey mixed with brown; tegulæ with black medial line; tarsi with pale rings. Fore wing grey-brown; subbasal line represented by double black striæ from costa and cell; a double black streak above inner margin before the antemedial line, which is double, filled in with grey, angled outwards below costa and strongly above inner margin, slightly excurved between those points; claviform brown defined by black, acute at extremity, a bidentate whitish mark above it on vein 2; orbicular oblique elliptical, with brown centre and whitish annulus defined by black; reniform rather narrow, fuscous grey defined by black; an indistinct medial line oblique from costa to vein 2, then dentate; postmedial line double, filled in with grey, bent outwards below costa, incurved to vein 4, then bisinuate, the area beyond it paler with some whitish points on costa; subterminal line whitish, defined on inner side by black streaks below costa and dentate marks at middle, angled outwards at vein 7 and dentate to termen on veins 4, 3, the area beyond it suffused with black; a terminal series of black lunules; cilia pale brown, with darker line through them and intersected with ochreous. Hind wing whitish, the base tinged with brown, the veins, discoidal lunule, and terminal half brown; cilia white; the underside whitish slightly irrorated with brown, a discoidal lunule, slight curved postmedial line, and broad subterminal band.

Hab. W. Turkestan, Ferghana, Issyk-kul; E. Turkestan, Korla, Kuldja, 1 ♀; Kashmir, Deosai Plains (*Leech*), 1 ♀. *Exp.* 40–44 millim.

1299. **Polia perdentata.** (Plate LXXXI. fig. 22.)

Hadena perdentata, Hmpsn. Moths Ind. ii. p. 198 (1894).
Mamestra bifida, Püng. Iris, xv. p. 149, pl. 5. f. 3 (1902).

Head and thorax purplish brown slightly mixed with grey; tegulæ with two black lines near upper edge; patagia edged with black; tarsi with pale rings; abdomen fuscous mixed with ochreous. Fore wing dark purplish grey suffused in parts with brown; subbasal line represented by double black striæ from costa and cell filled in with grey; a dentate black mark on inner area before the antemedial line, which is double and filled in with grey, angled outwards below costa and strongly above inner margin, waved between those points; claviform large, defined by black, a pale bidentate mark above and beyond it on vein 2; orbicular small, oblique elliptical, with brown centre and ochreous annulus defined

by black; reniform large, fuscous grey defined by black, with brown, and ochreous line on inner side; an indistinct medial line, oblique from costa to vein 2, then dentate; postmedial line double filled in with grey, bent outwards below costa, incurved to vein 5, then oblique and minutely waved, angled inwards above inner margin, the area beyond it rather paler except at costa, on which are some pale points; subterminal line ochreous, defined on inner side by black streaks below costa and dentate marks at middle, the area beyond it rather darker except at apex, angled outwards to termen at veins 7, 4, 3, a terminal series of black lunules; cilia grey, with blackish line through them and intersected with ochreous. Hind wing fuscous brown with darker terminal line, the cilia pale with brown line through them; the underside pale thickly irrorated with brown, a discoidal spot and sinuous postmedial line.

Hab. W. Turkestan, Alexander Mts., type† *bifida* ♂ ♀ in Coll. Püngeler; Kashmir, Kokser (*McArthur*), 1 ♀ type; Punjab, Kulu, 1 ♂. *Exp.* 42 millim.

1300. **Polia farnhami.** (Plate LXXXI. fig. 23.)

Mamestra farnhami, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 103, pl. 3. f. 2 (1873); Smith, Cat. Noct. N. Am. p. 116.

Head and thorax purplish red-brown slightly mixed with grey; tegulæ with medial black line and some black scales at tips; patagia with some black on upper edge; abdomen yellowish brown, the dorsal crests darker. Fore wing purplish, the veins with dark streaks; the subbasal line represented by double black striæ filled in with grey from costa and cell, and with some brown beyond it above vein 1; antemedial line double, black filled in with pale brown, waved and angled outwards above inner margin; claviform large, defined by black; orbicular and reniform narrow, defined by black, the former oblique elliptical with rufous centre and whitish annulus, the latter with whitish line on inner side, followed by rufous, then purplish; medial line oblique from costa to vein 2, then dentate, with a whitish mark before it below the orbicular, bidentate on vein 2 and submedian fold; the medial area from subcostal nervure to submedian fold browner; postmedial line double, black filled in with pale brown, bent outwards below costa, incurved to vein 5 where it is angled outwards, then oblique and dentate, some whitish points beyond it on costa; subterminal line whitish, interrupted by an oblique whitish fascia from apex, angled outwards to termen at vein 7, dentate to termen on veins 4, 3, and bent outwards to tornus, defined on inner side by a series of dentate black marks, the area beyond it rather browner; cilia intersected with whitish. Hind wing whitish tinged with brown, the veins and terminal area suffused with fuscous; cilia yellowish white; the underside white irrorated with brown, a dark discoidal lunule, sinuous postmedial line and terminal series of small lunules.

Hab. Canada, Calgary (*Wolley-Dod*), 2 ♀; U.S.A., Colorado, 1 ♂ type, (*Cockerell*) 1 ♀, Glenwood Springs. *Exp.* 44 millim.

1301. Polia furca.

Mamestra furca, Ev. Bull. Soc. Mosc. 1852, i. p. 154; Herr.-Schäff. Eur. Schmett., Noct. f. 628; Staud. Cat. Lep. pal. p. 160.
Dianthœcia collieti, Sparre-Schneider, Sieb. Enum. iii. p. 56 (1876).

♂. Head and thorax grey mixed with some red-brown; palpi blackish at sides; tegulæ with two black lines near upper edge; patagia edged with black above; abdomen grey-brown, the anal tuft and ventral surface tinged with rufous. Fore wing grey suffused with pale purplish; the subbasal line represented by double black striæ from costa and cell filled in with whitish; a blackish shade on inner area before the double antemedial line, which is filled in with whitish, angled outwards below costa and above inner margin and waved between those points; claviform large, dark brown defined by black, acute at extremity; orbicular small, elliptical, white defined by black and with slight brown centre, a whitish line on its outer edge confluent with the bidentate white mark on vein 2 before the medial line, which is oblique from costa to vein 2, then dentate; reniform with grey centre and whitish annulus defined by black, rather narrow; postmedial line double filled in with whitish, bent outwards below costa, incurved to vein 5, then oblique and minutely waved, the area beyond it purplish grey with some white points on costa; subterminal line whitish defined on inner side by some black streaks below costa and dentate marks at middle, the area beyond it blackish except at apex, angled outwards at vein 7 and dentate to termen at veins 4, 3; a terminal series of small black lunules; cilia with white line at base and intersected with white. Hind wing fuscous brown, the interspaces of basal half whitish; cilia white, with a brown line through them; the underside whitish irrorated with brown, a discoidal point, waved postmedial line and slight diffused subterminal band.

Hab. Norway; W. Turkestan, Saisan, Issyk-kul, Kuruk Tag, 1 ♂, Alexander Mts., 1 ♂, 1 ♀; E. Turkestan, Ili, Korla; Mongolia, Uliassutai; Tibet, Kuku-noor; E. Siberia. *Exp.* 42 millim.

1302. Polia suavis.

Mamestra suavis, Staud. Rom. Mém. vi. p. 428, pl. 7. f. 4 (1892); id. Cat. Lep. pal. p. 159.

♂. Head and thorax greyish mixed with brown; tegulæ with medial dark line; some black scales near upper edge of patagia; tarsi with whitish rings; abdomen grey tinged with pale reddish brown. Fore wing purplish pink suffused and irrorated with blackish, leaving the postmedial area and an apical patch purplish; subbasal line double, black filled in with purplish pink, slightly waved from costa to submedian fold; antemedial line double, filled in with pink, oblique from costa to submedian fold, then angled inwards on vein 1; claviform large, defined by black, a dentate pinkish patch beyond it on base of vein 2; orbicular and reniform large, defined by black, the former pinkish, oblique elliptical, the

latter purplish grey, its centre defined by fuscous, slightly angled inwards on median nervure and almost touching former; an indistinct medial line, oblique from costa to below cell; postmedial line double, filled in with purplish, dentate, bent outwards below costa, and oblique below vein 5, some pale points beyond it on costa; subterminal line white, defined by fuscous on inner side, forming somewhat dentate marks below costa and at middle, angled outwards at vein 7 and dentate to near termen on veins 4, 3; a terminal series of small dentate black marks; a whitish line at base of cilia. Hind wing whitish suffused with brown; cilia whitish; underside whitish irrorated with brown, a discoidal lunule, dentate postmedial line, and traces of diffused subterminal band.

Hab. Tibet, Kuku-noor; E. Siberia, Ussuri, 1 ♂. *Exp.* 38 millim.

1303. **Polia liquida.** (Plate LXXXI. fig. 24.)

Mamestra liquida, Grote, Papilio, i. p. 58 (1881); Smith, Cat. Noct. N. Am. p. 116.

Head and thorax blue-grey mixed with red-brown; tegulæ with dark brown medial line followed by rufous; patagia with some black scales above; abdomen grey, the anal tuft ochreous. Fore wing blue-grey; the subbasal line represented by black spots below costa and cell, defined by blue-grey on outer side, the costal area beyond it suffused with red-brown to subterminal line, on medial area extending to submedian fold or vein 1; antemedial line double filled in with blue-grey, angled outwards below costa, then oblique waved; claviform well developed, defined by black and filled in with fuscous; orbicular and reniform rather narrow, with brownish centres and whitish annuli defined by black, the former oblique elliptical, with a grey streak below it on vein 2, often developed into a prominent wedge-shaped mark; postmedial line double, filled in with blue-grey, minutely dentate and produced to black points on the veins, bent outwards below costa, slightly incurved at discal fold, oblique below vein 4, the area beyond it blue-grey except towards costa, on which are some white points; subterminal line white, defined by a red-brown line on its inner side and by the area beyond it being red-brown except at apex, angled outwards at vein 7 and dentate to termen on veins 4, 3; a terminal series of minute black lunules; cilia intersected with white. Hind wing white suffused with brown, leaving an ill-defined whitish postmedial band; the underside white, the costal and terminal areas irrorated with brown, a dark discoidal point.

Hab. U.S.A., Washington, 1 ♂, 2 ♀ type, Oregon, Colorado. *Exp.* 40–44 millim.

1304. **Polia radix.** (Plate LXXXI. fig. 25.)

Agrotis radix, Wlk. x. 332 (1856); Smith, Cat. Noct. N. Am. p. 117.
Mamestra dimmocki, Grote, Proc. Ac. Nat. Sci. Phil. 1875, p. 420.
Mamestra desperata, Smith, Proc. U.S. Nat. Mus. xiv. p. 221 (1891).

Head and thorax purplish red-brown slightly mixed with grey ; palpi blackish at sides ; tegulæ with black medial line ; abdomen pale red-brown. Fore wing deep red-brown slightly suffused with grey ; a sinuous black streak below base of cell ; a double, waved subbasal line from costa to submedian fold ; a double, oblique, waved antemedial line ; claviform slightly defined by black ; orbicular and reniform large, slightly defined by black, the former irregularly elliptical, the latter extending to below cell ; an irregular medial line angled outwards on median nervure ; postmedial line defined by greyish on outer side, dentate, bent outwards below costa, excurved to vein 4, then incurved ; subterminal line whitish, defined by somewhat dentate red-brown marks on inner side, angled outwards below costa and dentate nearly to termen on veins 4, 3. Hind wing fuscous brown, the cilia whitish ; the underside whitish thickly irrorated with dark brown, a dark discoidal spot and curved postmedial line.

Hab. Canada, Hudson's Bay, St. Martin's Falls (*Barnston*), 1 ♂ type, Nova Scotia (*Redman*), 1 ♀, Calgary (*Wolley-Dod*), 1 ♂, 2 ♀ ; U.S.A., Maine, 1 ♀, New Hampshire, White Mts. (*Dimmock*), 1 ♀ type *dimmocki*, Colorado, California, Sierra Nevada. *Exp.* 40 millim.

Larva. (Original.) Head heavily reticulate with black, the pale luteous ground appearing in small dotted patches. Body light grey-brown, the tubercles, a series of cuneiform subdorsal patches, and a stigmatal shade blackish. The subdorsal patches are a little oblique, sharply terminated behind, and the pair on joint 12 are confluent. Faint yellowish dorsal and subdorsal lines. Cervical shield and anal plate darkened. Substigmatal band broad, slightly paler than the ground-colour.

A general feeder.—H. G. D.

1305. **Polia atlantica.** (Plate LXXXI. fig. 26.)

Hadena w-latinum, Guen. Noct. ii. p. 104 (part.), nec Hüfn.
Mamestra atlantica, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 12 (1874) ; Smith, Cat. Noct. N. Am. p. 117.
Mamestra discolor, Speyer, Stett. ent. Zeit. xxxvi. p. 142 (1875).

♂. Head and thorax grey-brown with a reddish tinge ; palpi blackish at sides, frons with black bar ; tegulæ with black medial line ; abdomen grey-brown tinged with reddish. Fore wing grey-brown suffused with rufous, except the costal area to beyond middle ; a sinuous black streak below base of cell ; a subbasal black striga from costa ; antemedial line defined by grey on inner side, angled outwards below costa and inwards on subcostal and median nervures and vein 1, excurved below cell ; claviform moderate, defined by black and filled in with brown ; orbicular and reniform with greyish annuli defined by black, the former oblique elliptical, open above, the latter extending to below cell ; a dark shade beyond lower angle of cell ; some pale points on costa towards the subterminal line, which is yellowish white, angled outwards at vein 7, and dentate to termen on veins 4, 3, some dentate black marks before it

at middle and the area beyond it darker; a terminal series of small black lunules; cilia intersected with whitish. Hind wing whitish suffused with brown, darker on terminal area; cilia yellowish white; the underside white irrorated with brown, a dark discoidal spot and curved postmedial line.

Hab. Canada (*Norman*), 1 ♂, Calgary (*Wolley-Dod*), 1 ♂, 1 ♀; U.S.A., E. States, 2 ♂ type, Massachusetts, 2 ♂, Wisconsin, Virginia. *Exp.* 36 millim.

1306. Polia vidua. (Plate LXXXI. fig. 27.)

Mamestra vidua, Staud. Stett. ent. Zeit. 1888, p. 17; id. Cat. Lep. pal. p. 159.

♂. Head and thorax grey mixed with brown; frons with black bar above; tegulæ with black line near tips; tarsi with white rings; abdomen brownish grey. Fore wing grey suffused and irrorated with dark brown, the medial area more strongly suffused with brown except on costal area; subbasal line black, slightly angled outwards on median nervure, ending on the rather wedge-shaped black streak below base of cell; antemedial line black defined by whitish on inner side, angled outwards below costa, then waved and angled inwards on vein 1; claviform large, defined by black; orbicular and reniform large, with brownish centres and white annuli defined by black, the former oblique elliptical, its lower extremity nearly touching the latter, which is somewhat concave on inner side; traces of a waved medial line; postmedial line black, defined by whitish on outer side, minutely waved, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line white with slight dentate brown marks before it at middle, angled outwards at vein 7 and dentate to termen at veins 4, 3, the area beyond it rather darker except at apex; a terminal series of small black lunules; the underside grey irrorated with brown, a small discoidal spot and sinuous postmedial line.

Hab. W. Turkestan, Ferghana, Issyk-kul, 1 ♂. *Exp.* 30 millim.

1307. Polia splendens.

Noctua splendens, Hübn. Eur. Schmett., Noct. f. 400 (1827); Herr.-Schäff. Eur. Schmett., Noct. f. 396; Staud. Cat. Lep. pal. p. 157.

Head and thorax bright purplish red to pale dull rufous; tegulæ with slight medial line; abdomen ochreous tinged with purplish red or rufous. Fore wing bright purplish red to pale rufous, the veins and costal area irrorated with white; a dark rufous streak below base of cell; subbasal line indistinct, white, waved, from costa to submedian fold; antemedial line waved; claviform small to moderate, defined by rufous; orbicular and reniform irrorated with white and with fine white annuli defined by rufous, the former oblique, irregularly elliptical, a sinuous medial shade oblique from costa to lower angle of cell, where it is angled; postmedial line

slightly bent outwards below costa, oblique to vein 6, then inwardly oblique, minutely dentate and produced to short streaks on the veins, some white points beyond it on costa; subterminal line fine, white, defined on inner side by a prominent dark rufous shade except towards costa, angled outwards at vein 7 and dentate on veins 4, 3. Hind wing ochreous suffused with fuscous brown, the basal and inner areas paler; the cilia ochreous, sometimes tinged with purplish pink; the underside with the costal and terminal areas suffused with red, a small discoidal lunule and curved post-medial line.

Hab. Germany, Zeller, Frey, and Leech Colls.; Russia, Livonia, Zeller Coll.; Rumelia; E. Siberia, Amurland, 1 ♀, Ussuri; Corea. *Exp.* 36–40 millim.

Larva. Streckfuss, Ent. Nachr. vi. p. 279.

Ground-colour very variable, pale brassy or yellowish green to blackish or dark olive-green, thickly irrorated with white points; dorsal and subdorsal lines formed of larger white dots; lateral line yellow or white, with the black-edged white spiracles on it; the ground-colour darker above lateral line and on each side of subdorsal line; each somite with four dorsal black dots, forming straight lines on thoracic somites, on medial somites triangular marks, and on terminal somite a quadrate mark, each somite also with two dots above and below lateral line; head brownish or yellowish. Food-plants: grass, *Rumex*, *Plantago*. Differs from *M. oleracea* in the lateral stripe being broader, sharply defined below, and usually more yellow; the cervical shield without the four black dots.

1308. Polia oleracea.

Noctua oleracea, Linn. Syst. Nat. x. p. 517 (1858); Esp. Schmett. iv. pl. 165, ff. 4–8; Dup. Lép. Fr. vii. p. 20, pl. 101. f. 6; Steph. Ill. Brit. Ent., Haust. ii. p. 193; Staud. Cat. Lep. pal. p. 157.
Noctua spinaciæ, Bork. Eur. Schmett. iv. p. 454 (1792).
Mamestra variegata, Aust. Le Nat. iii. p. 142 (1885).

Head and thorax rather dull red-brown slightly irrorated with white; tarsi ringed with white; abdomen ochreous suffused with brown. Fore wing rather dull red-brown; the veins and costal area irrorated with white; a small white tuft at base; faint traces of a waved white subbasal line from costa to submedian fold; an indistinct antemedial line excurved in interspaces and angled inwards on median nervure and vein 1; claviform slightly defined by rufous; orbicular small, irregularly rounded, with whitish annulus; reniform indistinctly defined by brown, open above, with an orange spot in its upper part; traces of an oblique medial line from lower angle of cell to inner margin; postmedial line indistinct, dentate, often produced to a series of white points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa subterminal line white, indistinct towards costa, angled outwards at vein 7 and dentate to termen at veins 4, 3; cilia with a fine pale line at base. Hind wing yellowish white,

slightly tinged with brown, the veins and terminal area suffused with brown; the underside with the costal and terminal areas slightly irrorated with brown and tinged with purplish pink, a small discoidal spot and curved postmedial series of striæ on the veins.

Ab. 1. *variegata*. Much paler.—Morocco.

Hab. Britain, Scotland, England, Leech Coll., Ireland; France; Germany, Zeller Coll.; Switzerland, Frey Coll.; Algiers, Leech Coll.; Morocco, Tangier (*Meade-Waldo*), 1 ♀; Russia, Livonia, Zeller Coll.; Armenia; Asia Minor, Pontus, Bithynia: Syria; W. Turkestan, Tura, Issyk-kul, Tarbagatai Mts.; E. Turkestan, Ili. *Exp.* 42 millim.

Larva. Meyr. Brit. Lep. p. 84; Barrett, Lep. Brit. iv. p. 186, pl. 158. f. 1.

Green or brown, white-dotted; warts black; spiracular line yellow, edged above with dark grey. Food-plants: *Urtica*, *Rumex*, Elm, *Brassica*, etc. 7–9.

1309. Polia pisi.

Noctua pisi, Linn. Syst. Nat. x. p. 517 (1758); Esp. Schmett. iv. pl. 167. ff. 1–5; Hübn. Eur. Schmett., Noct. f. 429: Dup. Lép. Fr. vii. p. 17, pl. 101. f. 5; Steph. Ill. Brit. Ent., Haust. ii. p. 192; Staud. Cat. Lep. pal. p. 157.

Mamestra splendens, Steph. Ill. Brit. Ent., Haust. iii. p. 192 (1828).

Mamestra pallens, Staud. Stett. ent. Zeit. 1882, p. 35.

Mamestra rukavaaræ, Hoffm. Stett. ent. Zeit. 1893, p. 127.

Head and thorax bright rufous, the hairs tipped with grey; abdomen rufous, the anal tuft often ochreous. Fore wing bright purplish rufous, sometimes partly tinged with yellow, a waved

Fig. 25.—*Polia pisi*, ♂. ½.

greyish subbasal line from costa to submedian fold; a double, waved antemedial line, incurved in cell; claviform slightly outlined with brown; orbicular and reniform large, incompletely defined by brown, the former round, the dark medial shade passing between them; postmedial line defined by greyish on outer side, minutely waved, bent outwards below costa, incurved at discal fold and strongly below vein 4, some white points beyond it on costa; subterminal line yellowish white, prominent, especially in discal and submedian folds, where it has dark marks on its inner side, angled outwards at vein 7, dentate at veins 4, 3, then incurved; cilia with two pale lines through them. Hind wing yellowish white tinged with

brown, the veins and terminal area brown; cilia white with a brown line through them; the underside with the costal area suffused with rufous, a dark discoidal spot, curved postmedial line, and traces of a pale subterminal line.

Ab. 1. *rucavaarœ*. Dark purplish grey-brown instead of rufous. —Finland, Lapland, E. Siberia.

Ab. 2. *pallens*. Fore wing pale brown with a yellowish tinge, the markings less prominent.—Iceland; W. Turkestan.

Hab. Britain, Scotland, England, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Italy; Iceland; Scandinavia, Zeller Coll.; Russia, Finland, Leech Coll., Livonia, Zeller Coll.; W. Turkestan, Ala Tau, Issyk-kul; Mongolia, Urga; S.E. Siberia, Dauria, Ussuri. *Exp.* 36–42 millim.

Larva. Meyr. Brit. Lep. p. 85; Barrett, Lep. Brit. iv. p. 183, pl. 157. f. 2.

Green or purple-brown with black dots; subdorsal line yellow, black-edged; spiracular line yellow or pale greenish, black-edged above; head pale green or pinkish ochreous; legs sometimes pinkish. Food-plants: *Pteris*, *Cytisus*, *Scabiosa*, etc. 8–10.

1310. Polia tacoma. (Plate LXXXI. fig. 28.)

Mamestra tacoma, Streck. Lep. Rhop. & Het., Suppl. 3, p. 31 (1900); Dyar, Cat. Lep. N. Am. p. 156.

Head and thorax violaceous grey mixed with rufous; palpi, patagia, pectus, and legs mostly rufous; tegulæ with rufous medial line and tips; abdomen grey tinged with rufous, the anal tuft rufous, the ventral surface rufous irrorated with grey. Fore wing violaceous grey; the costal area suffused with rufous except at apex, before postmedial line extending to median nervure and before antemedial line to submedian fold; subbasal line double filled in with grey, waved, from costa to vein 1; antemedial line double filled in with grey, oblique and slightly waved; claviform moderate, rufous strongly defined by black; orbicular large, grey defined by black, open above and confluent with a grey patch on costa, somewhat oblique elliptical; reniform rufous, with grey annulus defined by black, the cell before and between the stigmata and the base of interspaces above veins 2, 3 tinged with black, leaving the veins streaked with grey; a waved medial line from cell to inner margin approximated to the postmedial line, which is double, dentate and produced to streaks on the veins, bent outwards below costa and incurved below vein 4; some pale points on costa towards apex; subterminal line whitish, obsolete towards costa, then slightly defined by rufous on inner side, the area beyond it rufous except at apex, angled outwards at vein 7 and dentate at veins 4, 3. Hind wing ochreous whitish tinged with brown, the terminal area brown except at submedian fold; cilia ochreous white, with a dark line through them; the underside whitish, the costal and terminal areas irrorated with rufous, a discoidal lunule and curved postmedial line.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 2 ♂, 1 ♀; U.S.A., 1 ♂, Washington. *Exp.* 40 millim.

Larva. (Original.) Head pale, shaded with brownish over the vertex. Body soft light green, occasionally shaded in brown; dorsal, subdorsal, and broad substigmatal lines paler, yellowish, defined by darker edges. Spiracles white, in black rings. No shields.

Food-plant: Thimbleberry (*Rubus*) and probably other low plants.—H. G. D.

1311. Polia satanella.

Mamestra satanella, Alph. Hor. Soc. Ent. Mosc. xxvi. p 445 (1892); id. Rom. Mém. ix. p. 16, pl. 2. f. 14; Staud. Cat. Lep. pal. p. 158.

♂. Head, thorax, and abdomen grey-brown mixed with dark brown; tarsi with pale rings. Fore wing grey-brown, the basal half suffused with fuscous brown; subbasal line represented by two dark striæ from costa; antemedial line double, the outer strong, oblique from costa to submedian fold, angled inwards on vein 1 and outwards above inner margin; claviform small, defined by black; orbicular and reniform defined by black, the former small, round, the latter constricted at middle and suffused with fuscous; a curved medial shade; postmedial line dentate, bent outwards below costa and incurved below vein 4, some pale points beyond it on costa; subterminal line pale brown, defined by a dark patch before it on costa, the area beyond it dark except at apex, angled outwards at vein 7 and dentate at veins 4, 3; some minute terminal black lunules; cilia with a fine pale line at base. Hind wing brown; the cilia pale, with a brown line through them; the underside pale, the costal and terminal areas suffused and irrorated with brown, a dark discoidal spot and curved postmedial line.

Hab. Tibet, Kuku-noor, 1 ♂, Amdo. *Exp.* 34 millim.

*1312. Polia quadrata. (Plate LXXXI. fig. 29.)

Mamestra quadrata, Smith, Pr. U.S. Nat. Mus. xiv. p. 248 (1891); id. Cat. Noct. N. Am. p. 124.

♂. Head, thorax, and abdomen dark reddish brown mixed with grey; tegulæ with medial black line; tarsi ringed with white. Fore wing dark reddish brown with some pale irroration, the postmedial area paler and redder towards inner margin; subbasal line defined by whitish on outer side, waved, from costa to vein 1; antemedial line defined by whitish on inner side, waved and oblique from costa to submedian fold, then slightly angled inwards on vein 1; claviform defined by black at extremity; orbicular and reniform slightly paler than ground-colour, very obscurely defined by black, the former somewhat elliptical; postmedial line defined by whitish on outer side and produced to black streaks with pale points on the veins, bent outwards below costa, incurved below vein 4 and angled outwards on vein 1; subterminal line pale,

defined on inner side by small dentate black marks at middle, angled outwards at vein 7 and dentate to near termen on veins 4, 3; a pale line at base of cilia. Hind wing uniform reddish brown; the cilia pale, with a brown line through them; the underside grey, irrorated and suffused with reddish brown, a small discoidal spot and curved postmedial line.

Hab. U.S.A., California, in U.S. Nat. Mus. *Exp.* 36 millim.

Larva. Head luteous with brown reticulations and bands. Body brown, reticulate and dotted on a yellowish-brown ground. Faint brown shades form an obscure dorsal lattice marking. Ordinary lines faintly indicated, pale, the dorsal and subdorsal narrow, the substigmatal broad. Feet pale.—H. G. D.

1313. Polia softa. (Plate LXXXI. fig. 30.)

Mamestra softa, Staud. Iris, x. p. 275, pl. 4. f. 15 (1897); id. Cat. Lep. pal. p. 159.

Head and thorax grey mixed with reddish brown and fuscous; tegulæ edged with blackish above; tarsi with blackish bands; abdomen whitish irrorated with brown. Fore wing grey, tinged with pale red-brown and irrorated with fuscous and black; subbasal line obsolete; an oblique pale streak below the cell before the antemedial line, which is indistinct, double, oblique from costa to submedian fold, angled inwards on vein 1 and outwards above inner margin; claviform moderate, indistinctly defined by brown; orbicular and reniform indistinctly defined by brown, the former small, round, or oblique elliptical, open above, the latter with some fuscous in its lower part; postmedial line defined by whitish on outer side, minutely dentate and produced to short dark streaks on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line whitish, defined by reddish brown on inner side and the area beyond it darker, angled outwards at vein 7 and to termen at veins 4, 3; a terminal series of small black lunules. Hind wing pure white, the veins slightly irrorated with black; the underside with the costal area irrorated with fuscous, a discoidal lunule and curved postmedial line.

Hab. Morocco; Palestine, 1 ♂, 1 ♀. *Exp.*, ♂ 38, ♀ 40 millim.

1314. Polia sutrina. (Plate LXXXI. fig. 31.)

Mamestra sutrina, Grote, Papilio, i. p. 5 (1881); Smith, Cat. Noct. N. Am. i. p. 127.

♂. Head and thorax grey mixed with some black, and tinged with ochreous except patagia; tegulæ with black medial line; patagia edged with black on outer side; tarsi banded with black; abdomen grey-brown, the dorsal crests tipped with black. Fore wing bluish white irrorated and suffused with dark brown, the medial area slightly darker; a black streak in submedian fold to postmedial line, interrupted by the lines; subbasal line represented

by black spots below costa and cell defined by white on outer side and a white striga on the black streak; antemedial line oblique, waved, defined by white on inner side; claviform moderate, defined by black; orbicular and reniform large, with brown centres and white annuli incompletely defined by black, the former round; traces of a waved medial line on inner area; postmedial line defined by white on outer side, dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line white, defined on inner side by a dark mark at costa and dentate black marks from discal fold to inner margin, irregular, angled outwards at vein 7 and excurved at middle, the area beyond it browner at middle and termen, a terminal series of small black lunules; cilia grey, with a dark line through them. Hind wing fuscous brown, the cilia grey, with a fuscous line through them; the underside grey thickly irrorated with brown, a dark discoidal spot and indistinct sinuous postmedial line.

Hab. Canada, Alberta, Calgary; U.S.A., Colorado, 1 ♂ type. *Exp.* 34 millim.

1315. Polia dentina.

Noctua dentina, Schiff. Wien. Verz. p. 82 (1776); Esp. Schmett. iv. pl. 127. f. 3 (1789); Hübn. Eur. Schmett., Noct. f. 408; Dup. Lép. Fr. vi. p. 269, pl. 89. f. 6; Staud. Cat. Lep. pal. p. 159.
Noctua plebeia, Haw. Lep. Brit. p. 193 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 185.
Noctua leucostigma, Haw. Lep. Brit. p. 198 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 186.
Noctua proxima, Frr. Neue Beitr. Schmett. ii. pl. 104. f. 2 (1836), nec Hübn.
Hadena latenai, Pierret, Ann. Soc. Ent. Fr. 1837, p. 177, pl. 8. f. 3.
Noctua hilaris, Zett. Ins. Lapp. p. 938 (1840).

Head and thorax grey mixed with black; tegulæ with black medial line; tarsi ringed with white; abdomen greyish fuscous. Fore wing violaceous grey irrorated with fuscous; the medial area suffused with fuscous brown; a black streak in base of submedian fold; subbasal line represented by double striæ from costa and cell; some yellow on inner margin near base usually present; antemedial line double, waved, oblique; claviform moderate, defined by black, a bidentate whitish patch beyond it below the cell; orbicular and reniform grey defined by black and with more or less developed fuscous centres, the former round; an indistinct waved medial line; postmedial line double, dentate and produced to short streaks on the veins, bent outwards below costa and incurved below vein 4, some white points beyond it on costa; subterminal line whitish, often tinged with yellow, defined on inner side by small dentate black marks and with some black beyond it at discal fold, angled outwards at vein 7 and somewhat dentate at veins 4, 3; a terminal series of small black lunules; cilia fuscous intersected with white. Hind wing fuscous brown, rather darker on terminal area; cilia yellowish at base, with brown line through them and white tips;

the underside grey irrorated with brown, a small discoidal spot, curved postmedial line, and subterminal band.

Ab. *latenai*. Much darker, the fore wing wholly suffused with fuscous.

Hab. Britain, Scotland, England, Leech Coll.; France, Pyrenees, Gavarnie (*Mrs. Nicholl*); Germany, Zeller & Leech Colls.; Austria; Switzerland, Zeller, Frey. & Leech Colls.; Spain, Canales (*Chapman*); N. Italy; Russia, Livonia, Zeller Coll., St. Petersburg, Zeller Coll.; Armenia; Asia Minor, Bithynia; W. Turkestan, Issyk-kul; W. Siberia, Altai; E. Turkestan, Ili; Kashmir, Goorais Valley (*Leech*), 1 ♂. *Exp.* 32–42 millim.

Larva. Meyr. Brit. Lep. p. 82; Barrett, Lep. Brit. iv. p. 197, pl. 159. f. 1.

Pale grey-brown; a dorsal series of conjoined blackish spots edged with white; spiracular line darker; lateral and subspiracular lines less distinct. Food-plant, roots of *Taraxacum*. 5.

1316. Polia glauca.

Noctua glauca, Kleem. Beitr. Ins. i. pl. 48. ff. 1–7 (1792); Hübn. Eur. Schmett., Noct. f. 410; Dup. Lép. Fr. vi. p. 322, pl. 92. f. 7; Steph. Ill. Brit. Ent., Haust. ii. p. 185; Staud. Cat. Lep. pal. p. 158.
Noctua aperta, Geyer, Eur. Schmett., Noct. f. 800 (1827).
Noctua lappo, Dup. Lép. Fr. vii. p. 255, pl. 116. f. 3 (1827).
Hadena quadripositа, Zett. Ins. Lapp. p. 939 (1840).
Hadena farkasii, Herr.-Schäff. Eur. Schmett., Noct. f. 390 (1845), nec Treit.
Mamestra taunensis, Fuchs, Jhrb. Nass. lii. p. 133 (1899).
Hadena poliostigma, Hmpsn. Moths Ind. ii. p. 201 (1894).

Head and thorax grey, more or less mixed with black-brown; tegulæ with medial black line; frons with black bar; tarsi ringed with black; abdomen dark brown slightly mixed with grey, the dorsal crests black. Fore wing purplish grey, more or less completely suffused with brown and black; subbasal line black, waved, from costa to submedian fold, defined by grey on outer side; antemedial line double, waved; claviform well developed, whitish defined by black and with two black streaks from it to postmedial line; orbicular and reniform whitish, with fuscous centres and defined by black, the former round; postmedial line defined by white on outer side, bent outwards below costa, then lunulate, incurved below vein 4, some white points beyond it on costa; subterminal line white defined by black on inner side and by dentate black marks below costa and at middle, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules; cilia intersected with white. Hind wing uniform dull reddish brown or with the interspaces of basal half whitish; the cilia white at tips; the underside whitish irrorated with brown, a discoidal spot and sinuous postmedial line.

Ab. 1. *aperta*. Darker.

Ab. 2. *taunensis*. Fore wing suffused with black.

Ab. 3. *quadripositа*. Much greyer.

Hab. Britain, Scotland, England, Ireland, Leech Coll.; E. France;

Germany, Zeller & Frey Colls.; Switzerland, Zeller & Frey Colls.; Norway, Romsdal, Frey Coll.; Russia, Livonia, Zeller Coll.; W. Turkestan, Issyk-kul; E. Turkestan, Ili; Amurland; Kamschatga; Kashmir, Scinde Valley (*Leech*), 1 ♀ type *poliostigma*. *Exp.* 32–42 millim.

Larva. Meyr. Brit. Lep. p. 82; Barrett, Lep. Brit. iv. p. 193. pl. 158. f. 3. Brown with darker freckles; dorsal line narrow, dark; a subdorsal series of oblique dark and light markings; spiracular line whitish; head pale brown with darker freckles. Food-plants: *Salix*, *Tussilago*. 7–8.

*1317. Polia gasiva. (Plate LXXXI. fig. 32.)

Amathes gasiva, Schaus, J. N. Y. Ent. Soc. vi. p. 108 (1898).

♂. Head and thorax grey and dark brown; abdomen grey-brown, with the dorsal crests darker. Fore wing grey strongly irrorated with dark brown, suffused in parts with black-brown, especially on medial area, and slightly with red-brown; a waved subbasal black line from costa to vein 1; a waved antemedial line oblique from costa to below cell where it is obtusely angled; claviform small, outlined with black; orbicular and reniform grey defined by black, the diffused medial dark shade passing between them, the orbicular large, round, the reniform with black point above it on costa; the black postmedial line dentate, bent outwards below costa, excurved to vein 4, then oblique; the subterminal line grey defined on each side by dark brown, excurved at vein 7 and at middle and slightly angled inwards at veins 5 and 2; the veins of terminal area streaked with black. Hind wing whitish strongly tinged with brown especially towards termen: cilia whitish, with a brown line near base; the underside grey irrorated with brown; a dark discoidal point and indistinct curved postmedial line.

Hab. Mexico, Las Vigas, type † ♂ in Coll. Schaus. *Exp.* 28 millim.

*1318. Polia paranica. (Plate LXXXII. fig. 1.)

Mamestra paranica, Schaus, J. N. Y. Ent. Soc. xi. p. 231 (1903).

♀. Head and thorax grey mixed with black and brown; palpi blackish at sides; tarsi banded black and white; abdomen grey irrorated with fuscous. Fore wing violaceous grey, irrorated and in places suffused with black; subbasal line double, black filled in with white, waved, from costa to vein 1, the area beyond it olive-green to the oblique waved antemedial line, defined by white on inner side and connected with postmedial line by a blackish streak in submedian fold; medial area with the interspaces olive-green; orbicular small, round, white with olive-green centre and some white above it on costa and below it; reniform rather ill-defined,

grey partly suffused with olive-green, its centre defined by black; an indistinct waved medial line; postmedial line black, defined by white on outer side, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line prominent, white, waved, angled outwards at vein 7, inwards at discal and submedian folds, excurved at middle, with a band of olive-green before it, some green spots beyond it in the interspaces, and some black in discal and submedian folds; a terminal series of small black lunules; cilia olive-green with some black, the tips white. Hind wing ochreous white, the terminal half and costal and inner areas suffused with fuscous; cilia yellowish white; the underside yellowish white, the costal area irrorated with fuscous, a discoidal point, indistinct curved postmedial line and diffused subterminal band.

Hab. Brazil, Castro Paraña, type † ♀ in Coll. Schaus. *Exp.* 40 millim.

1319. Polia cuneata. (Plate LXXXII. fig. 2.)

Mamestra cuneata, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 139, pl. 4. f. 9 (1873); Smith, Cat. Noct. N. Am. p. 127.

Head and thorax dark brown mixed with grey; frons with black bar; tegulæ with black medial line; patagia with white patch edged with blackish; abdomen brown and grey, the dorsal crests tipped with black, the genital tuft yellowish. Fore wing grey irrorated and suffused with black-brown, the medial area darker; subbasal line double, black filled in with grey, waved and angled outwards at median nervure, ending at vein 1; antemedial line double, filled in with grey, obliquely waved and angled inwards on vein 1; claviform well-developed, defined by black; orbicular and reniform with greyish annuli defined by black, the former rather oblique elliptical; postmedial line defined by grey on outer side, dentate and produced to grey and black streaks on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line whitish, defined on inner side by slight black and yellow dentate marks at middle and more prominent spot in submedian fold, angled outwards at vein 7 and excurved at middle, the area beyond it rather darker; a terminal series of small black lunules. Hind wing fuscous brown; cilia pale, with a brown line through them; the underside whitish, thickly irrorated with brown, a discoidal point and sinuous postmedial line.

Ab. 1. Fore wing with the basal area tinged with red, the stigmata and terminal area whiter.

Ab. 2. Fore wing almost entirely tinged with red.

Hab. Canada, Vancouver I.; U.S.A., Washington, 2 ♀, Oregon, California, 3 ♂, 2 ♀ type, (*Walsingham*) 2 ♂, 1 ♀, Mendocino, 1 ♀. *Exp.* 34 millim.

1320. Polia anguina. (Plate LXXXII. fig. 3.)

Mamestra anguina, Grote, Can. Ent. xiii. p. 129 (1881); Smith, Cat. Noct. N. Am. p. 128.
Mamestra larissa, Smith, Ent. News Philad. vi. p. 338, pl. xv. f. 11 (1895); Dyar, Cat. Lep. N. Am. p. 152.

Head and thorax black-brown mixed with white: frons with blackish bar; tegulæ with strong medial black line; tarsi banded black and white; abdomen whitish thickly irrorated with reddish brown, the dorsal crests blackish at tips. Fore wing blue-grey irrorated and suffused with fuscous brown, the medial area darker; a fine black streak below base of cell; subbasal line double, waved, from costa to submedian fold, and with an oblique striga beyond it from subcostal nervure to submedian fold; antemedial line double, curved, hardly waved; claviform large, defined by black; orbicular and reniform large, with brown centres and grey annuli defined by black; postmedial line double, the outer line strong, crenulate and produced to streaks on the veins, bent outwards below costa, excurved to vein 4, then incurved and touching reniform and claviform, some grey points beyond it on costa; subterminal line grey slightly defined by brown, and with a dark patch before it on costa, excurved at vein 7 and middle, angled inwards at submedian fold, where it is crossed by a black streak extending to termen; a fine dark terminal line; cilia chequered grey and fuscous. Hind wing white, the veins brownish, the costal and terminal areas tinged with brown, nearly uniformly suffused with fuscous in female; cilia white, with a dark line through them; the underside with dark irroration on costal area, an indistinct sinuous postmedial line.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 3 ♂, 3 ♀; U.S.A., Maine, New Jersey, Illinois, 1 ♂ type, Nebraska, Colorado, Arizona, Prescott (*Kunzé*), 1 ♂, 2 ♀. *Exp.* 32 millim.

1321. Polia vicina. (Plate LXXXII. fig. 4.)

Mamestra vicina, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 156 (1874); Smith, Cat. Noct. N. Am. p. 128.
Mamestra teligera, Morr. Proc. Bost. Soc. N. H. xvii. p. 215 (1874).
Mamestra acutipennis, Grote, Can. Ent. xii. p. 214 (1880).

Head and thorax clothed with dark brown and grey scales; palpi black at sides; frons with black bar; tegulæ with black medial line; patagia edged with black; tarsi banded with black; abdomen grey irrorated with brown, the dorsal crests dark at tips. Fore wing whitish, suffused and irrorated with fuscous; a sinuous black streak below base of cell; subbasal line indistinct, double, angled outwards in cell and ending at submedian fold; antemedial line double, nearly even, oblique from costa to submedian fold where it is angled; claviform usually narrow and acute, often filled in with black, and with a rufous streak above it; orbicular and reniform with slight whitish annuli defined by black, the former oblique elliptical; postmedial line defined by grey on outer side,

somewhat dentate and produced to points on the veins, bent outwards below costa and incurved below vein 4, touching the reniform and claviform, some grey points beyond it on costa; subterminal line grey, defined on inner side by a dark mark on costa and by a series of dentate black marks at middle, angled outwards at vein 7, excurved at middle and angled inwards in submedian fold, where it is developed into a black and white spot, the area beyond it tinged with fuscous; a terminal series of small black lunules. Hind wing white, the veins and terminal area tinged with fuscous, strongly so in female; cilia white, with a brown line through them; the underside with the costal area irrorated with brown, a dark discoidal point and sinuous postmedial line or series of striæ on the veins.

Ab. 1. *acutipennis*. More blue-grey and strongly irrorated with black; fore wing with the medial area suffused with black except towards inner margin.

Hab. U.S.A., E. States, 1 ♂, 3 ♀ type, Maine, New York, Evan's Centre, 1 ♂, Texas, Nevada, 1 ♀ type *acutipennis*, California, Shasta, 1 ♀. *Exp.* 34–36 millim.

1322. Polia pensilis. (Plate LXXXII. fig. 5.)

Dianthœcia pensilis, Grote, Proc. Acad. Nat. Sci. Phil. 1874, p. 199; Smith, Cat. Noct. N. Am. p. 128.

Head and thorax grey mixed with dark brown; frons with black bar; tegulæ with strong medial black line; abdomen grey mixed with brown. Fore wing grey irrorated and suffused with brown; a black streak below base of cell with a red-brown tinge above it; subbasal line defined by grey on outer side, angled outwards in cell and ending at submedian fold; antemedial line double, nearly even, oblique from costa to submedian fold, angled inwards on vein 1; claviform defined by black, acute and reaching postmedial line, filled in with rufous and with rufous streak above it; orbicular and reniform rather small, with grey annuli defined by black, the former oblique elliptical; the cell and the area beyond it more or less tinged with rufous; postmedial line defined by white on outer side, dentate and produced to points on the veins, bent outwards below costa and incurved below vein 4; subterminal line formed of a series of yellowish-white lunules except towards costa, defined by dentate black marks on inner side and with a more prominent spot in submedian fold, excurved at vein 7 and middle; a terminal series of small black lunules. Hind wing semihyaline white, the veins and termen tinged with brown, more strongly in female; cilia white, with a brown line through them; the underside with the costal and terminal areas irrorated with brown, a dark discoidal spot and indistinct curved postmedial line.

Ab. 1. The markings indistinct.

Hab. Canada, Renfrew Co., 4 ♂, 1 ♀, Calgary (*Wolley-Dod*), 1 ♂, 1 ♀, Vancouver I., 1 ♂, 1 ♀ type, (*J. J. Walker*) 2 ♀;

U.S.A., Texas, Washington, Colorado, Durango (*Oslar*), 2 ♂, 2 ♀, California, Sanzalito, 1 ♂, 1 ♀, (*Walsingham*) 4 ♀, Arizona, Prescott (*Kunzé*), 2 ♂, 2 ♀. *Exp.* 30–34 millim.

1323. Polia segregata. (Plate LXXXII. fig. 6.)

Mamestra segregata, Smith, Ent. News Philad. iv. p. 100, pl. vi. f. 11 (1893).

Head, thorax, and abdomen dark brown mixed with grey. Fore wing clothed with dark brown scales edged with grey and suffused with shining purplish; subbasal line black, curved from costa to submedian fold, then bent inwards to base above vein 1; antemedial line black, defined by grey on inner side, oblique from costa to submedian fold, then waved and with a black fascia in submedian fold from it to inner margin; orbicular and reniform well-developed, defined by black, the former greyish, open above and below, the latter open above, with greyish annulus and with some rufous beyond it; postmedial line sinuous, bent outwards below costa and strongly incurved below vein 4; subterminal line white defined by slight black marks on each side of it, angled outwards at vein 7 and excurved at middle; a fine black terminal line. Hind wing grey-brown with fine dark terminal line, the underside grey irrorated with brown.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 1 ♀, Laggan, British Columbia, Roseland (*Danby*), 1 ♂. *Exp.* 38 millim.

*1324. Polia cnivetti. (Plate LXXXII. fig. 7.)

Hadena knivetti, Hmpsn. Moths Ind. ii. p. 203 (1894).

♀. Head and tegulæ white; palpi and lower part of frons mostly black, the vertex with some black scales; antennæ black, tegulæ slightly tinged with brown except at tips; thorax purplish black mixed with deep black and a few red-brown scales; tibiæ and tarsi banded with white; abdomen dorsally whitish, the crests and segmental lines fuscous, the anal tuft rufous, the ventral surface black. Fore wing dark purplish grey, with patches of white and diffused white markings; a white patch near base between subcostal nervure and vein 1, crossed by the waved black subbasal line which is bent inwards above vein 1, and with black markings with some white on them beyond it; antemedial line black defined by white on inner side, oblique, slightly sinuous; claviform defined by black and with black fascia from it to postmedial line; orbicular and reniform large, defined by black, the former white, open above and connected with a white costal patch, the latter purple-grey with incomplete whitish annulus, angled inwards on median nervure, the cell before and between them suffused with black, some white beyond the reniform; postmedial line black slightly defined by white on outer side, bent outwards below costa, incurved and sinuous below vein 4, bent outwards at vein 1; subterminal

line strong, white defined by blackish on inner side and with dentate black marks between it and termen, expanding into white patches at apex and between veins 4, 3 extending to termen; cilia with a fine white line at base. Hind wing white slightly tinged with brown, the veins and a fine terminal line browner; the underside with a small discoidal spot and sinuous postmedial line.

Hab. Sikkim (*Knyvett*), type† ♀ in Coll. Elwes. *Exp.* 42 millim.

1325. Polia albomarginata.

Celæna albomarginata, Druce, Biol. Centr.-Am., Het. ii. p. 478, pl. 93. f. 23 (1898).

♀. Head and thorax white mixed with purple-black; palpi black at sides; legs banded black and white; abdomen fuscous black. Fore wing purplish grey suffused in parts with black, the medial area black, the terminal area yellowish white sparsely irrorated with black; a black point on costa at base; subbasal line double, black filled in with white, angled inwards and interrupted in cell, from costa to submedian fold; antemedial line fine, white defined by black, angled outwards below costa where it is developed into a pinkish-white spot, then oblique, sinuous, and excurved above inner margin; claviform only defined by having a lunulate white spot beyond it; orbicular and reniform well-developed, pinkish with slight white annuli and connected by a pinkish fascia on median nervure, beyond the cell bent downwards and ending on subterminal line at vein 3; the orbicular oblique elliptical and connected with a pinkish spot on costa; postmedial line whitish defined on each side by black, arising from a pinkish spot on costa, bent outwards below costa, excurved to vein 5, then incurved and sinuous, some white points beyond it on costa; subterminal line only defined by the contrast between the white and purple areas, and by black patches on its inner side at costa and inner margin, somewhat dentate at veins 4, 3, 2, where it is defined by slight pinkish lunules on outer side; a fine black terminal line; cilia intersected by black. Hind wing black-brown; cilia white, black at apex and chequered with black at middle; the underside with the basal half of costal area irrorated with white, whitish towards inner margin, a small discoidal spot and curved postmedial line.

Hab. Costa Rica, Candelaria Mts. (*Underwood*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 32 millim.

1326. Polia mista. (Plate LXXXII. fig. 8.)

Mamestra mista, Staud. Stett. ent. Zeit. 1889, p. 35; id. Cat. Lep. pal. p. 158.

Head and thorax grey-white mixed with some dark brown; palpi blackish at sides; frons with dark bar above; patagia with some black scales on upper edge; abdomen grey irrorated with brown. Fore wing grey irrorated with golden brown; the cell

and area between it and postmedial line, the area between submedian fold and vein 1 and the terminal area more or less completely suffused with golden brown; a sinuous black streak below base of cell; subbasal line represented by double black striæ from costa and cell; antemedial line double, waved; claviform large, golden brown defined by black; orbicular and reniform moderate, with brown centres and white annuli defined by black; an indistinct waved medial line angled at lower angle of cell; the base of interspaces above veins 2, 3 tinged with black; the postmedial line defined by white on outer side, strongly dentate, bent outwards below costa, excurved to vein 4, then incurved; some white points on costa towards apex; subterminal line prominent, white, angled outwards at vein 7 and more or less strongly dentate at veins 4, 3; a terminal series of small black lunules; cilia intersected with white. Hind wing whitish tinged with brown, the terminal area suffused with fuscous, more strongly in female; the underside whitish, the costal area irrorated with brown, a small discoidal spot, slight curved postmedial line, and some obscure subterminal patches.

Hab. W. Turkestan, Issyk-kul, 1 ♂, 1 ♀; E. Turkestan, Khashgar, Ili. *Exp.* 40 millim.

*1327. Polia mutilata. (Plate LXXXII. fig. 9.)

Mamestra mutilata, Smith, Ent. News, ix. p. 246 (1898); Dyar, Cat. Lep. N. Am. p. 156.

Head and thorax clothed with dark brown and grey hair and scales; tarsi with whitish rings; abdomen brown and grey. Fore wing fuscous brown mostly overlaid with purplish-grey scales, some yellowish in base of submedian fold and beyond the claviform; subbasal line waved, from costa to vein 1; antemedial line oblique, waved; claviform moderate, defined by black, incompletely above; orbicular and reniform moderate, whitish defined by black, the former round; postmedial line rather indistinct, dentate, bent outwards below costa, excurved at vein 4, then incurved; subterminal line pale, defined on inner side by very slight, minute dentate blackish marks, angled outwards at vein 7 and excurved at middle; traces of a terminal series of black lunules. Hind wing uniform fuscous brown; the underside grey irrorated with brown, a small discoidal spot and sinuous postmedial line.

Hab. Canada, British Columbia, in U.S. Nat. Mus. *Exp.* 36 millim.

1328. Polia beani. (Plate LXXXII. fig. 10.)

Mamestra beanii, Grote, Can. Ent. ix. p. 87 (1877); Smith, Cat. Noct. N. Am. p. 123.

Head and thorax purplish grey mixed with dark brown and red-brown; tegulæ with black medial line; tarsi blackish with pale rings; abdomen reddish brown. Fore wing purplish grey suffused

with fuscous and ferruginous red; a waved black subbasal line from costa to submedian fold slightly defined by grey on outer side; an oblique, waved, black antemedial line, angled inwards on the veins and defined by grey on inner side; claviform small, defined by black; orbicular and reniform large with brown-defined centres and grey annuli defined by black, rather incompletely above, the former oblique elliptical, the latter with black patch in lower part; an indistinct, curved, waved medial line; postmedial line dentate and produced to points on the veins, bent outwards below costa and incurved below vein 4, defined by grey on outer side, some pale points beyond it on costa; subterminal line fine, grey defined by rufous on inner side, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of brown lunules. Hind wing dark brown, the terminal area suffused with fuscous; cilia white, with a brownish line through them: the underside whitish irrorated with red-brown, especially on costal and terminal areas, a discoidal spot and traces of postmedial line.

Hab. U.S.A., Illinois, Texas, Colorado, 1 ♂, 1 ♀ type. *Exp.* 44–48 millim.

1329. Polia legitima. (Plate LXXXII. fig. 11.)

Apamea legitima, Grote, Proc. Ent. Soc. Phil. iii. p. 82, pl. 2. f. 4 (1864); Smith, Cat. Noct. N. Am. p. 123.

Head and thorax purple-grey mixed with red-brown; palpi blackish at sides; frons with blackish bar; tegulæ with medial black line; patagia with some black scales above; pectus more rufous in male; abdomen grey-brown, the anal tuft tinged with rufous. Fore wing purple-grey; the costal area suffused with rufous to subterminal line, extending over the whole cell and sometimes diffusedly to vein 1; a waved black subbasal line from costá to vein 1 defined by grey on outer side; an oblique, double, waved antemedial line, the inner rufous and indistinct, the outer black; claviform small or moderate, defined by black and often filled in with black; orbicular and reniform large, defined by black, the former grey, oblique elliptical, open above, the latter rufous with pale annulus, its lower part filled in with fuscous; an indistinct curved, waved medial line; postmedial line dentate and produced to points on the veins, bent outwards below costa and incurved below vein 4, some white points beyond it on costa; subterminal line waved, grey defined by rufous on inner side, angled outwards at vein 7 and excurved at middle, the area beyond it tinged with fuscous or rufous; a terminal series of black lunules. Hind wing whitish suffused with brown and the terminal area with fuscous; cilia white, brown at base; the underside irrorated with red-brown, especially on costal and terminal areas, a discoidal spot and traces of postmedial line and subterminal band.

Hab. Canada, Nova Scotia (*Redman*), 2 ♂, 1 ♀; U.S.A., N., E., & Middle States, 1 ♂, 2 ♀, New York, 1 ♀, Oregon, Portland. *Exp.* 42 millim.

Larva. Head light red. Body violaceous brown; subdorsal and substigmatal lines broad, pale yellow, the subdorsal narrowly, the substigmatal broadly black-edged above; a yellow dorsal stripe on joint 2, vanishing on joint 3, the ground-colour of joint 2 dark; an irregular brown lower edge to the substigmatal band on thorax only. Feet pale.—H. G. D.

1330. **Polia dodi.** (Plate LXXXII. fig. 12.)

Mamestra dodii, Smith, ined.

Head and thorax purplish grey mixed with rufous; tegulæ with dark medial line; abdomen grey irrorated with fuscous, the anal tuft tinged with ochreous. Fore wing blue-grey, the costal area suffused with rufous, on basal area extending to vein 1, and on medial area to median nervure; subbasal line defined by grey on outer side, angled outwards below costa and cell and extending to vein 1; antemedial line double filled in with grey, angled outwards below costa and excurved below cell and above inner margin; claviform small, acute at extremity, defined by black; orbicular and reniform grey, their centres slightly defined by brown, the former narrow, oblique elliptical, tinged with rufous above, the latter suffused with rufous above and fuscous below; postmedial line defined by grey on outer side, dentate and produced to points on outer side, bent outwards below costa and incurved below vein 4; subterminal line whitish, angled outwards at vein 7 and minutely dentate at veins 4, 3, defined by rufous on inner side forming somewhat dentate marks at middle, the area beyond it dark except at apex; a terminal series of small black lunules. Hind wing ochreous white tinged with fuscous, the veins and terminal area fuscous; cilia whitish; the underside whitish with a slight reddish tinge and some black irroration, a slight discoidal lunule and diffused subterminal band.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 1 ♂, 1 ♀. *Exp.* 34 millim.

1331. **Polia lilacina.** (Plate LXXXII. fig. 13.)

Mamestra lilacina, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 119 (1874); Smith, Cat. Noct. N. Am. p. 123.
Mamestra illabefacta, Morr. Proc. Bost. Soc. N. H. xvii. p. 141 (1874).

Head and thorax grey mixed with dark brown; tegulæ with slight blackish medial line; abdomen grey mixed with reddish brown. Fore wing purplish grey, mostly suffused with brown and irrorated with dark brown; traces of a waved subbasal line from costa to submedian fold; an oblique, waved, antemedial line defined by grey on inner side; claviform moderate to large, defined by black; orbicular and reniform large, with fuscous centres and greyish annuli defined by blackish, the former oblique elliptical; an indistinct waved medial line angled outwards to lower angle of cell; postmedial line double filled in with grey, minutely dentate

and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line grey, defined by brown on inner side, the area beyond it dark except at costa, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing pale suffused with brown, the terminal area darker; cilia white and brown; the underside whitish irrorated with brown, a brown discoidal spot.

Hab. Canada, Alberta (*Wolley-Dod*), 2 ♂, 2 ♀; U.S.A., N., E., Middle & Central States, 1 ♀ type, Massachusetts, Beverley, 1 ♀ type *illabefacta*, New York, Evan's Centre, 1 ♂, Colorado, New Mexico. *Exp.* 36 millim.

1332. Polia illoba.

Agrotis illoba, Butl. A. M. N. H. (5) i. p. 162 (1878); id. Ill. Het. B.M. iii pl. 44. f. 7; Staud. Cat. Lep. pal. p. 157.
Graphiphora pacifica, Butl. A. M. N. H. (5) i. p. 165 (1878); id. Ill. Het. B.M. ii. pl. 30. f. 2.
Mamestra declinans, Staud. Stett. ent. Zeit. 1888, p. 250; id. Rom. Mém. vi. p. 427, pl. 8. f. 2.

Head and thorax grey mixed with dull brown; tarsi with pale rings; abdomen grey mixed with brown. Fore wing purplish grey irrorated and suffused with dull reddish brown: an indistinct, pale, waved subbasal line from costa to submedian fold; antemedial line indistinct, double, oblique, waved; claviform defined by black and filled in with blackish; orbicular and reniform large, with brownish centres and grey annuli defined by black, the former somewhat oblique elliptical, the latter with some fuscous in lower part; a slight medial shade, oblique from costa to lower angle of cell; postmedial line slightly waved, bent outwards below costa, excurved to vein 4, then oblique; subterminal line whitish, defined by red-brown on inner side, angled outwards at vein 7 and excurved at middle. Hind wing whitish, the veins and terminal area tinged with brown or wholly suffused with brown; the underside white, the costal and terminal areas irrorated with brown, a small discoidal spot and sinuous postmedial line.

Ab. 1. *declinans*. Head, thorax, and fore wing suffused with bright rufous.

Hab. E. Siberia, Ussuri; Japan, Hakodate, 1 ♂ type, Yokohama (*Jonas*, *Pryer*, *Manley*), 7 ♂, 7 ♀, type *pacifica*, Tokio (*Maries*), 1 ♂, 1 ♀, Oiwake (*Pryer*), 1 ♂, 1 ♀, Chiuzenji (*Lewis*), 1 ♀; Corea, Gensan (*Ito*), 1 ♂, 1 ♀; C. China, Kiukiang (*Pratt*), 1 ♀. *Exp.* 44–46 millim.

*1333. Polia dictyota. (Plate LXXXII. fig. 14.)

Mamestra dictyota, Lower, Proc. Linn. Soc. N.S.W. 1901, p. 643.

♀. Head and thorax dark brown mixed with grey; some black on vertex of head and extremity of tegulae; tarsi black with pale

rings; abdomen brown. Fore wing grey suffused with brown and irrorated with black; the subbasal and antemedial lines waved, whitish defined on each side with black, the former from costa to submedian fold, the latter oblique; claviform large, pale brownish with white outline; orbicular and reniform with brownish centres and whitish annuli, the former round, the latter moderate, the cell between them blackish; postmedial line whitish defined on each side by black, minutely waved, bent outwards below costa, excurved to vein 3, then oblique; subterminal line whitish, angled outwards slightly at vein 7 and excurved at middle, with a series of dentate black marks on its inner side; a terminal series of black points. Hind wing brown; the cilia whitish at tips; the underside whitish with slight discoidal spot; the terminal area suffused with fuscous from costa to vein 2.

Hab. Victoria, Melbourne, type † ♀ in Coll. Lower. *Exp.* 32 millim.

1334. **Polia calberlai.** (Plate LXXXII. fig. 15.)

Hadena calberlai, Staud. Stett. ent. Zeit. 1883, p. 181; Calb. Iris, i. p. 182, pl. 12. f. 9; Staud. Cat. Lep. pal. p. 159.

Head, thorax, and abdomen pale greyish brown mixed with black; tegulæ with ill-defined blackish medial line, patagia edged with blackish. Fore wing pale greyish brown suffused and irrorated with fuscous, the medial area slightly darker; subbasal line black, angled outwards below costa and ending on the rather wedge-shaped black streak below base of cell; antemedial line indistinctly double, waved, oblique from costa to submedian fold, then angled inwards on vein 1; claviform defined by black, large, acute at extremity and extending to postmedial line; orbicular and reniform with pale annuli, defined by black and with more or less black suffusion in cell before and between them, the former rounded, the latter angled inwards on median nervure; an indistinct diffused medial line; postmedial line double, the inner line black, the outer indistinct, very minutely dentate, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line pale, defined by fuscous on inner side and with slight black streaks before it above and below vein 5, angled outwards at vein 7 and excurved at middle, the area beyond it suffused with fuscous except at apex, a terminal series of slight black lunules. Hind wing fuscous brown, the cilia with an ochreous-white line at base; the underside whitish irrorated with brown, a small discoidal spot and diffused curved postmedial line.

Hab. Austria, S. Tirol, 1 ♂, 1 ♀; Italy. *Exp.* 36 millim.

Larva on *Clematis vitalba*.

1335. Polia gavisa. (Plate LXXXII. fig. 16.)

Mamestra gavisa, Schaus, Journ. N. Y. Ent. Soc. vi. p. 142 (1898); Druce, Biol. Centr.-Am., Het. ii. p. 567.

♂. Head and thorax red-brown with a purplish tinge, the scales with pale tips; palpi blackish at sides; tarsi banded black and pinkish; abdomen fuscous brown, the ventral surface more rufous. Fore wing dark brown irrorated with grey and tinged with purplish red; a sinuous black streak in base of submedian fold; subbasal line indistinctly double, filled in with greyish, waved, from costa to submedian fold; antemedial line double filled in with greyish, waved, somewhat oblique; claviform small, defined by black; orbicular and reniform defined by black, the former small, round, the latter concave towards base and with white line on its outer edge; traces of a medial line, approximated below the cell to the postmedial line which is double filled in with grey and with some short black streaks beyond it on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line represented by a series of small black and grey dentate marks defined by red-brown on inner side, the area beyond them fuscous except at apex, slightly angled outwards at vein 7 and middle; a terminal series of black points; cilia blackish, with fine pale lines at base and middle. Hind wing fuscous brown, pale on basal and inner areas; cilia pale with a brown line through them; the underside pale irrorated with dark brown, the costal area tinged with purplish pink, a black discoidal spot, sinuous postmedial line, and terminal waved line interrupted at the veins.

Hab. Mexico, Las Vigas, 1 ♂, type † ♂ in Coll. Schaus. *Exp.* 36 millim.

1336. Polia goodelli. (Plate LXXXII. fig. 17.)

Mamestra goodelli, Grote, Can. Ent. vii. p. 223 (1875); Smith, Cat. Noct. N. Am. p. 124.

Head and thorax dark brown slightly mixed with red-brown and grey; tarsi with pale rings; abdomen fuscous brown. Fore wing dark brown tinged with red-brown and slightly mixed with grey; subbasal line double filled in with grey, curved from costa to submedian fold; antemedial line rather indistinct, double filled in with grey, oblique, waved; claviform small, strongly defined by black; orbicular and reniform defined by black, the former nearly round, the latter whitish, its centre defined by fuscous; an indistinct waved medial line, oblique from costa to median nervure; postmedial line dentate and produced to white points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line interrupted, grey, dentate, angled outwards at vein 7 and excurved at middle, with some small dentate black marks on its inner side; a terminal

series of small black lunules; a series of pale points at base of cilia. Hind wing fuscous brown, with dark terminal line and fine pale line at base of cilia; the underside whitish irrorated with brown, thickly on costal and terminal areas, a dark discoidal point and sinuous postmedial line.

Hab. Canada; U.S.A., N., E., and Middle States, New York, Evan's Centre (*Grote*), 4 ♂, 2 ♀, type, Nebraska. *Exp.* 36 millim.

1337. Polia sadales.

Mamestra sadales, Druce, Biol. Centr.-Am., Het. ii. p. 477, pl. 93. fig. 19 (1898).

♀. Head and thorax black-brown slightly mixed with grey; tarsi with pale rings; abdomen black-brown slightly mixed with ochreous. Fore wing black, suffused with purplish grey and slightly irrorated with white and black; a double, waved subbasal line from costa to submedian fold; a double antemedial line angled outwards below costa, oblique to submedian fold, then waved; claviform rather small, defined by black; orbicular and reniform defined by black, the former round, the latter indistinct and with white point on its upper edge; a double, waved postmedial line bent outwards below costa and oblique below vein 4, some pale points beyond it on costa; subterminal line represented by a series of small brownish spots with somewhat dentate black marks on their inner side, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; a fine white line at base of cilia. Hind wing white suffused with fuscous brown except the cell and interspaces below and beyond it of basal two-thirds; the underside with discoidal lunule and irregularly dentate postmedial line.

Hab. Mexico, Guerrero (*H. H. Smith*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 40 millim.

1338. Polia chalcia, n. sp. (Plate LXXXII. fig. 18.)

♀. Head and thorax dark brown slightly mixed with grey; tarsi with pale rings; abdomen reddish brown, the ventral surface fuscous irrorated with grey. Fore wing reddish brown, suffused with dark brown and irrorated with silvery purple, especially on the veins; a waved black subbasal line from costa to submedian fold; a rather indistinct, double, oblique, waved antemedial line; claviform short, defined by black; orbicular and reniform indistinctly defined by black, the former rather small, oblique elliptical, the latter a narrow lunule with ochreous-white point on its outer edge; an indistinct curved medial line; postmedial line rather ill-defined, dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then oblique; subterminal line pale reddish, defined by black-brown on inner side except between veins 4 and 2, somewhat dentate, angled outwards at

vein 7 and excurved at middle; a terminal series of small black spots; cilia with a whitish line at base. Hind wing dark reddish brown; cilia dark brown with a whitish line at base; the underside brown irrorated with white, a small black discoidal lunule and irregular dentate brown postmedial line.

Hab. Guatemala, Cerro Zunil, 4000′ (*Champion*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 40 millim.

1339. Polia ectypa. (Plate LXXXII. fig. 19.)

Mamestra ectypa, Morr. Proc. Bost. Soc. N. H. xviii. p. 118 (1875); Smith, Cat. Noct. N. Am. p. 124.
Mamestra bella, Grote, Papilio, iii. p. 30 (1883).

♂. Head and thorax dark brown mixed with grey; tegulæ with black medial line and white tips, patagia with some black scales near upper edge; tarsi ringed with white; abdomen grey-brown, the segments slightly edged with grey, the anal tuft tinged with ochreous. Fore wing grey, irrorated and suffused with fuscous and tinged with violaceous brown before and beyond the postmedial line; subbasal line represented by double black striæ from costa and median nervure, with slight black marks just beyond it above vein 1 and on inner margin; antemedial line represented by a black spot below costa, then bent inwards, double, oblique to vein 1 and angled outwards above inner margin; claviform rather large, suffused with and defined by black; orbicular and reniform with brownish centres and white annuli defined by black, the former oblique elliptical, the latter large; postmedial line double, dentate, filled in with white towards costa and inner margin, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line yellowish white, defined on inner side by dentate dark marks below costa and from vein 5 to inner margin, slightly angled outwards at vein 7, excurved and waved at middle; a terminal series of black lunules; cilia slightly intersected with white. Hind wing pale, uniformly suffused with fuscous brown, the cilia whitish with brown line through them; the underside irrorated with fuscous, the costal and terminal areas suffused with fuscous, a black discoidal lunule and indistinct curved postmedial line.

Hab. U.S.A., Delaware, Dover, 1 ♂; New Jersey, West Virginia. *Exp.* 34 millim.

1340. Polia noverca. (Plate LXXXII. fig. 20.)

Mamestra noverca, Grote, Can. Ent. x. p. 236 (1878); Smith, Cat. Noct. N. Am. p. 124.

Head and thorax rufous mixed with dark brown; palpi blackish at sides; tarsi blackish with pale rings; abdomen pale reddish irrorated with dark brown; subbasal line waved, black, defined by greyish on outer side and with a slight black streak beyond its

extremity in submedian fold; antemedial line indistinct, waved, oblique, defined by greyish on inner side; orbicular and reniform defined by black, the former U-shaped, strongly defined, the latter whitish, open above and with its centre slightly defined by brown; a medial shade oblique from costa to median nervure where it is angled; postmedial line double filled in with grey, minutely dentate and produced to black and white points on the veins, bent outwards below costa and oblique below vein 4, some pale points beyond it on costa; subterminal line fine, pale, interrupted, dentate, angled outwards at vein 7 and excurved at middle, with some rather dentate black streaks before it extending beyond it to termen in interspaces above veins 4 to 6; a terminal series of small black lunules; cilia with a fine pale line at base. Hind wing whitish tinged with red-brown, the terminal area suffused with red-brown; the underside paler irrorated with red-brown, a dark discoidal point and indistinct sinuous postmedial line.

Hab. U.S.A., Nebraska, 1 ♂ type. Colorado (*Bruce*), 2 ♀, Glenwood Springs, California, Knight Valley, 1 ♀, Arizona, Nogales (*Oslar*), 1 ♂. *Exp.* 36 millim.

*1341. Polia bolteri. (Plate LXXXII. fig. 21.)

Mamestra bolteri, Smith, Pr. U.S. Nat. Mus. xxii. p. 463 (1900); Dyar, Cat. Lep. N. Am. p. 156.

♀. Head and thorax ochreous mixed with dark brown; tarsi with pale rings; abdomen ochreous brown. Fore wing ochreous brown, irrorated and suffused with fuscous; subbasal and antemedial lines indistinctly double, waved, the former from costa to submedian fold, the latter slightly oblique; claviform absent; orbicular and reniform moderate, defined by blackish, the former round; a prominent diffused medial shade, oblique from costa to median nervure; postmedial line indistinct, defined by ochreous on outer side and with some pale points beyond it on the veins, bent outwards below costa and oblique below vein 4, some pale points beyond it on costa; subterminal line greyish slightly defined by fuscous on each side and with a more prominent patch before it on costa, slightly angled outwards at vein 7, then minutely waved; a terminal series of small black lunules. Hind wing ochreous suffused with brown, the cilia ochreous; the underside ochreous white irrorated with fuscous, a small discoidal spot and curved postmedial line.

Hab. U.S.A., New Mexico, in U.S. Nat. Mus. *Exp.* 42 millim.

1342. Polia mania. (Plate LXXXII. fig. 22.)

Mamestra mania, Streck. Lep. Rhop. & Het., Suppl. 2, p. 5 (1899); Dyar, Cat. Lep. N. Am. p. 156.

♀. Head and thorax reddish brown mixed with fuscous; abdomen ochreous greyish, dorsally suffused with fuscous, ventrally

irrorated with brown; tarsi fuscous with ochreous rings. Fore wing pale reddish brown irrorated and suffused with fuscous, the medial and terminal areas darker; the veins slightly irrorated with white; subbasal line indistinct, waved, from costa to submedian fold; an oblique waved antemedial line defined by pale reddish on inner side; claviform absent; orbicular pale reddish incompletely defined by black, round; reniform fuscous, with pale reddish annulus except below, where it has some whitish points on its edge and is slightly angled inwards on median nervure; an indistinct waved medial line, excurved at lower angle of cell; postmedial line dentate, produced to short streaks ending in white points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line pale reddish, angled outwards at vein 7 and inwards at discal and submedian folds, excurved at middle, some small dentate black marks before it at middle; a terminal series of black points; cilia pale reddish, with a fuscous line through them. Hind wing fuscous; the cilia ochreous with a fuscous line through them; the underside pale, irrorated and the terminal area suffused with fuscous, a small discoidal spot and curved postmedial line.

Hab. U.S.A., Colorado, Arizona (*Poling*), 1 ♀. *Exp.* 36 millim.

1343. **Polia obscura.** (Plate LXXXII. fig. 23.)

Mamestra obscura, Smith, Pr. U.S. Nat. Mus. x. p. 468 (1891); id. Cat. Noct. N. Am. p. 124.

♂. Head and thorax black-brown slightly tinged with grey; tarsi with pale rings; abdomen grey-brown. Fore wing black-brown, with a reddish tinge on inner area and slightly irrorated with grey; hardly a trace of subbasal line; antemedial line indistinct, waved, oblique; orbicular and reniform defined by black, the former U-shaped, the latter greyish; an indistinct waved medial line from cell to inner margin; postmedial line indistinct, slightly defined by brown on outer side, dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some grey points beyond it on costa; subterminal line represented by a series of small grey and black dentate marks, angled outwards at vein 7 and excurved at middle. Hind wing pale fuscous brown, the cilia rather paler; the underside greyish thickly irrorated with brown, a dark discoidal point and sinuous postmedial line.

Hab. Canada, Calgary (*Wolley-Dod*), 5 ♂; U.S.A., Wisconsin, ? Arizona. *Exp.* 36 millim.

1344. **Polia mœrens.** (Plate LXXXII. fig. 24.)

Cerastrina mœrens, Butl. Trans. Ent. Soc. 1882, p. 125.

♀. Head and thorax black-brown, many of the scales tipped

with white; tarsi ringed with white; abdomen fuscous irrorated with grey. Fore wing pale olive-brown, almost entirely irrorated and suffused with fuscous; faint traces of a waved subbasal line from costa to submedian fold; antemedial line indistinct, double, waved; orbicular and reniform fuscous with slight pale annuli, the former round; traces of a medial line angled outwards on median nervure; postmedial line slightly defined by pale brown on outer side, bent outwards below costa, excurved to vein 4, then incurved, with a series of black and white points beyond it on the veins and some white points on costa; subterminal line prominent, ochreous, slightly defined by black on inner side, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of black points defined by slight ochreous lunules on inner side. Hind wing fuscous brown, pale at base; cilia grey with a fuscous line through them; the underside whitish thickly irrorated with fuscous, a small discoidal spot and traces of a postmedial line.

Hab. Chili (*Edmonds*), 2 ♀ type. *Exp.* 38 millim.

1345. **Polia atrirena**, n. sp. (Plate LXXXII. fig. 25.)

♀. Head and thorax red-brown mixed with black, the scales tipped with grey; the tegulæ edged with white; frons with black bar; abdomen fuscous brown, the ventral surface purplish red irrorated with black. Fore wing red-brown with a purplish tinge, and sparsely irrorated with black; subbasal line indistinct, black, curved from costa to submedian fold; antemedial line double, ill-defined and interrupted, slightly waved; claviform represented by a few black scales; orbicular and reniform with black centres and white annuli defined by black, the former small, round, the latter large; postmedial line indistinctly double, dentate, bent outwards below costa, excurved to vein 4, then incurved, some grey points beyond it on costa; subterminal line a faint fuscous shade, angled outwards at vein 7 and slightly excurved at middle, a terminal series of small black lunules. Hind wing fuscous, the interspaces of basal half whitish; the underside whitish, the costal and terminal areas irrorated with brown and black, a black discoidal lunule and rather strong postmedial line.

Hab. Br. E. Africa, Lagari (*Betton*), 1 ♀, Ndimu (*Betton*), 1 ♀ type. *Exp.* 40 millim.

1346. **Polia assimilis.** (Plate LXXXII. fig. 26.)

Mamestra assimilis, Morr. Bull. Buff. Soc. Nat. Sci. ii. p. 119 (1874); Smith, Cat. Noct. N. Am. p. 121.
Mamestra pulverulenta, Smith, Proc. U.S. Nat. Mus. x. p. 468 (1887).

Head and thorax black-brown; tarsi with pale rings; abdomen ochreous suffused with fuscous brown. Fore wing black with a slight fuscous gloss; a pale rufous streak on base of inner margin; a slight black streak below base of cell; antemedial line somewhat

oblique and slightly sinuous; claviform defined by black; orbicular and reniform defined by black, the former large and touching antemedial line, the latter slightly angled inwards on median nervure; traces of a waved medial line; postmedial line somewhat dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line represented by a series of small, somewhat dentate black and white marks, stronger below apex and with prominent white patch above tornus, angled outwards at vein 7 and excurved at middle; cilia intersected with whitish. Hind wing yellowish white, the veins, costal and terminal areas suffused with fuscous; the underside with the costal and terminal areas irrorated with fuscous, the former and costal area of fore wing tinged with red, a discoidal lunule and curved postmedial line.

Ab. 1. *pulverulenta*. Fore wing more or less strongly irrorated with grey; the underside without red on costal area.

Hab. Canada, Vancouver I. (*J. J. Walker*), 1 ♂; U.S.A., N. & E. States, Massachusetts, Buffalo (*Kellicott*), 1 ♀, New York. *Exp.* 40–42 millim.

Larva. (Original.) Head light red, paler in the sutures. Body uniform, black or dark green; subdorsal and substigmatal stripes broad, pale yellow, strongly contrasted. Subventral region and feet shaded in dark red, venter pale, spiracles white.

Food-plants: Brake (*Pteris*) and other low plants.—H. G. D.

1347. **Polia aya.** (Plate LXXXII. fig. 27.)

Agrotis aya, Dogn. Ann. Soc. Ent. Belge, xli. p. 412 (1897).
Mamestra zobira, Schaus, J. N. Y. Ent. Soc. vi. p. 110 (1898).

♂. Head and thorax dark red-brown irrorated with a few white scales; tarsi ringed with white; abdomen greyish fuscous. Fore wing dark purple-brown, a streak in base of submedian interspace and the costal area towards apex redder; subbasal line represented by an ochreous striga from costa; antemedial line ill-defined, black, with patches of ochreous on its inner side; claviform small, black; orbicular and reniform with ochreous annuli defined by black, the former rounded, open above, the latter with its centre defined by black and with some white points on its outer side; postmedial line defined by ochreous on outer side, minutely dentate, bent outwards below costa and incurved below vein 4, some white points beyond it on costa; subterminal line represented by a series of small reddish-ochreous spots angled outwards at vein 7 and excurved at middle, with a larger spot at tornus; a terminal series of white points. Hind wing semihyaline white, the veins and marginal areas fuscous brown; cilia white at tips; the underside with the costal area and termen down to vein 2 brown irrorated with white, a small dark discoidal spot and traces of a postmedial line.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♂, Godman-Salvin Coll.; Ecuador, type † in Coll. Dognin. Type † ♂ *zobira* in Coll. Schaus. *Exp.* 32 millim.

*1348. Polia nervina. (Plate LXXXII. fig. 28.)

Apamea nervina, Dogn. Ann. Soc. Ent. Belge, xli. p. 408 (1897).

♂. Head and thorax black-brown; tarsi ringed with whitish; abdomen fuscous black. Fore wing reddish brown thickly irrorated and suffused with black; an indistinct, double, waved subbasal line from costa to submedian fold; a double, waved antemedial line angled outwards above inner margin; claviform small, obscurely defined by black; orbicular and reniform with fuscous centres and yellow-brown annuli defined by black, the former round, the latter with a small white lunule on its outer edge and a white point at lower extremity; an indistinct oblique medial shade from lower angle of cell to inner margin; the postmedial line indistinct, double, waved, bent outwards below costa and incurved below vein 4; the subterminal line ochreous defined by black suffusion on inner side, angled outwards at vein 7 and excurved at middle, diffused to termen towards tornus; a terminal series of black points. Hind wing with the basal half whitish, the terminal half fuscous brown; cilia whitish at tips towards tornus; the underside irrorated with white, the inner half whitish to postmedial line, a black discoidal spot and sinuous postmedial line.

Hab. Ecuador, Zamora, type † ♂ in Coll. Dognin. *Exp.* 28 millim.

1349. Polia pannosa.

Apamea pannosa, Moore, P. Z. S. 1881, p. 345; id. Lep. Ceyl. iii. p. 27, pl. 147. f. 1; Hmpsn. Moths Ind. ii. p. 205.

Head and thorax rufous mixed with black and grey; tarsi with pale rings; abdomen fuscous, the anal tuft tinged with rufous. Fore wing purplish red-brown more or less completely suffused with black, leaving pale ochreous patches before the antemedial line below the cell, beyond the postmedial line between vein 2 and inner margin, and a whitish apical patch; the subbasal line double, waved, from costa to submedian fold; the antemedial line double filled in with ochreous, waved, angled outwards below costa and above inner margin and inwards on median nervure; claviform small, indistinctly defined by black; orbicular and reniform with pale annuli defined by black, the former small, round, the latter narrow; traces of a waved medial line; postmedial line black defined by ochreous on outer side, minutely waved, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line represented by some pale spots with very indistinct blackish dentate marks before them, angled outwards at vein 7 and slightly excurved at middle, the apical white patch indented by the angle at vein 7; a terminal series of small black lunules; a pale line at base of cilia. Hind wing fuscous, sometimes whitish towards base; cilia with pale tips; the underside whitish, the costal area irrorated with fuscous, a small discoidal spot and curved postmedial line, the terminal area suffused with fuscous.

Hab. Nilgiris (*Lindsay, Hampson*), 2 ♂, 5 ♀; Ceylon, 5 ♀ type. *Exp.*, ♂ 40, ♀ 48 millim.

Subsp. *sichima*. Moore, Lep. Atk. p. 109 (1882).

Fore wing much more uniform pale rufous, with less black suffusion and the pale patches almost obsolete.

Hab. Punjab, Kasauli, 1 ♂; Sikhim (*Russell*), 1 ♀ type.

1350. **Polia dipterigidia.** (Plate LXXXII. fig. 29.)

Mamestra dipterigidia, Hmpsn. Ann. S. Afr. Mus. ii. p. 267 (1902).

Head and thorax dark rufous; tarsi with ochreous rings; abdomen fuscous, the anal tuft and ventral surface rufous. Fore wing dark rufous suffused with fuscous, the inner area with some yellowish, becoming a prominent patch beyond postmedial line; subbasal line represented by black striæ from costa and cell; an indistinct waved antemedial line; claviform, orbicular, and reniform indistinctly defined by black, the orbicular round; traces of a dark medial shade; postmedial line dentate, bent outwards below costa, excurved to vein 4, then oblique, some ochreous points beyond it on costa; subterminal line represented by indistinct ochreous points on black streaks; a terminal series of black points; a fine ochreous line at base of cilia. Hind wing fuscous brown, the interspaces of basal half with an ochreous tinge; the underside ochreous, the costal and terminal areas irrorated with brown, a discoidal point and postmedial strigiform line.

Hab. Cape Colony, Annshaw (*Miss F. Barrett*), 1 ♂, 1 ♀ type. *Exp.* 42 millim.

*1351. **Polia xanthocosma.** (Plate LXXXII. fig. 30.)

Mamestra xanthocosma, Turner, Trans. Roy. Soc. S. Austr. 1903, p. 3.

♀. Head and thorax grey-brown; abdomen grey. Fore wing reddish brown; the subbasal line represented by ochreous strigæ from costa and cell, defined on inner side by black and with an ochreous fascia in submedian fold from it to the antemedial line, which is ochreous defined on each side by black and slightly sinuous, with a black mark before it above inner margin; claviform short, black; orbicular absent; a slight ochreous streak in end of cell before the reniform, which is ochreous defined by black, with a black spot on its lower part and constricted at middle; postmedial line black, defined on outer side by ochreous and with an ochreous patch beyond it from vein 2 to inner margin, minutely waved, bent outwards below costa, excurved to vein 4, then oblique; subterminal line ochreous, angled outwards at vein 7 and excurved at middle, the area beyond it dark brown. Hind wing whitish tinged with brown, especially towards costa and termen; the underside with the costal area irrorated with brown and with traces of a postmedial line on it.

Hab. ? Queensland, type ♀ in Coll. Turner. *Exp.* 28 millim.

1352. Polia mesoglauca. (Plate LXXXII. fig. 31.)

Mamestra mesoglauca, Hmpsn. Ann. S. Afr. Mus. ii. p. 267 (1902).

♀. Head and thorax dark purple-brown mixed with black and white scales; tegulæ with medial black line; tarsi with ochreous rings; abdomen grey-brown, purplish red on terminal half and ventral surface. Fore wing dark purplish brown mixed with grey and black scales, the medial area suffused with white; the subbasal line represented by black striæ from costa and cell; a black streak below the cell to the antemedial line which is defined by white on inner side, interrupted, waved; claviform small, defined by black; orbicular and reniform moderate, white defined by black and with slight dark centres, the cell between them blackish or rufous; postmedial line minutely waved and produced to blackish streaks on the veins, bent outwards below costa, incurved at discal fold, incurved below vein 4, some pale points beyond it on costa; subterminal line ochreous, defined on inner side by irregular diffused dentate dark marks, angled outwards at vein 7 and dentate at veins 4 and 3, the area beyond it greyish fuscous leaving an ochreous apical patch; a terminal series of black lunules; cilia fuscous with a series of ochreous points at base. Hind wing fuscous, the interspaces of basal half whitish; cilia ochreous with a brown line through them; the underside whitish, with the costal and terminal areas irrorated and suffused with brown.

Hab. Natal, Durban (*Innes*, *Queckett*), 2 ♀: Cape Colony, Annshaw (*Miss F. Barrett*), 1 ♀ type. *Exp.* 36 millim.

1353. Polia speyeri.

Trigonophora speyeri, Feld. Reis. Nov. pl. 110. fig. 15 (1874).

Head and thorax purplish fuscous, a few of the scales tipped with grey; tegulæ with black medial line; tarsi with whitish rings; abdomen white tinged with fuscous towards extremity, uniformly tinged in female. Fore wing with the basal area and costal half purplish fuscous, the rest of wing pale ochreous brown suffused with fuscous towards termen; the veins with dark streaks; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line double, waved, very strongly angled inwards on vein 1 and outwards above inner margin; claviform large, defined by or filled in with black; orbicular rather small, defined by black, somewhat elongate elliptical; reniform large, narrow, cream-colour defined by black and with red-brown annulus at middle placed on a blackish patch; an indistinct dentate medial line; postmedial line double, the outer line indistinct, dentate, oblique from costa to vein 5, then strongly incurved; subterminal line ochreous, with somewhat dentate blackish marks before it at middle, dentate outwards at veins 7, 4, and 3, the area beyond it purplish fuscous; termen crenulate with black line and series of small wedge-shaped black

marks before it. Hind wing pure white; the apex tinged with fuscous; in female the extremity of veins and a waved terminal line fuscous; the underside with the costal area irrorated with brown.

Hab. Natal, Estcourt (*Hutchinson*), 1 ♂, Durban (*Leigh*), 1 ♀; Cape Colony, Queenstown. *Exp.*, ♂ 42, ♀ 48 millim.

1354. **Polia cuprescens**, n. sp. (Plate LXXXII. fig. 32.)

♂. Head and thorax cupreous red mixed with black; tegulæ with medial black line; tarsi banded with black; abdomen greyish mixed with fuscous, the basal crest and anal tuft rufous. Fore wing cupreous red-brown mixed with fuscous, the medial area mostly suffused with fuscous; subbasal line black from costa to a short black streak in base of submedian fold; antemedial line oblique, waved; claviform defined by black and with black streak from it to postmedial line; orbicular and reniform cupreous defined by black and with slight fuscous centres, the former round; an indistinct waved medial line; postmedial line minutely waved, bent outwards below costa, slightly angled inwards in discal fold, incurved below vein 4; subterminal line cupreous red, defined on inner side by a series of small dentate fuscous marks, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia fuscous intersected with cupreous red. Hind wing white, the veins towards termen fuscous; a fuscous terminal line; the cilia tinged with ochreous; underside with the costal and terminal areas tinged with ochreous and irrorated with fuscous, a discoidal spot and postmedial line on costal half.

Hab. Mashonaland, Salisbury (*Marshall*), 2 ♂ type. *Exp.* 34 millim.

1355. **Polia mesomelana.** (Plate LXXXIII. fig. 1.)

Agrotis mesomelana, Hmpsn. Ann. S. Afr. Mus. ii. p. 263 (1902).

Head and thorax reddish, almost entirely suffused with black; tegulæ with medial black line; tarsi with pale rings; abdomen ochreous tinged with fuscous. Fore wing pale thickly striated with rufous, the costa, medial area except towards inner margin, and terminal area suffused with black; subbasal line double, waved, from costa to submedian fold; antemedial line indistinct, double, waved; claviform moderate, defined by black; orbicular and reniform large, fuscous defined by black, the former round, open above; postmedial line dentate and produced to short streaks on the veins, bent outwards below costa, incurved at discal fold and below vein 4, some pale points on costa beyond it; subterminal line only defined by the area beyond it being dark, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing semihyaline white, the inner area tinged with ochreous; in female nearly the whole wing tinged with fuscous;

the underside with the costal area irrorated with brown, a slight discoidal point and traces of a sinuous postmedial line.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂; Natal, Estcourt (*Hutchinson*), 2 ♂ type. *Exp.* 32 millim.

1356. Polia furvilinea. (Plate LXXXIII. fig. 2.)

Mamestra furvilinea, Hmpsn. Ann. S. Afr. Mus. ii. p. 268 (1902).

Head and thorax red-brown mixed with grey; abdomen greyish chreous irrorated with brown, the anal tuft more ochreous. Fore wing red-brown thickly irrorated with grey, the veins streaked with grey; subbasal line represented by an indistinct striga from costa; antemedial line obliquely curved, brown defined by grey on inner side; claviform absent; orbicular and reniform rather oblique, V-shaped, open above, with grey annuli defined by brown; postmedial line indistinct, bent outwards below costa and oblique below vein 4; subterminal line whitish defined by rufous on inner side, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing white, the veins beyond middle and terminal area tinged with brown especially in female; cilia with brown line near base; the underside with the costal and terminal areas irrorated with brown.

Hab. Mashonaland, Salisbury (*Marshall*), 2 ♂; Cape Colony, Transkei (*Miss F. Barrett*), 2 ♀ type. *Exp.* 38 millim.

*1357. Polia magellana. (Plate LXXXIII. fig. 3.)

Dianthœcia magellana, Mab. Bull. Soc. Philom. (7) ix. p. 64 (1885); id. N. Arch. Mus. (3) i. p. 152, pl. xi. f. 9.

♂. Head and thorax grey-brown mixed with black and some red, especially on patagia, which are somewhat irrorated with black; abdomen grey-brown, the anal tuft tinged with ochreous. Fore wing grey-brown irrorated with black and slightly with pale rufous; subbasal line double, black filled in with grey, and slightly waved from costa to submedian fold; antemedial line double, black filled in with grey, nearly straight but incurved to inner margin; claviform short, rounded, brown defined by black; orbicular and reniform with rufous centres and grey annuli defined by black, the former round; a waved blackish medial shade; postmedial line double, black filled in with grey, minutely waved, bent outwards below costa, excurved to vein 4, then strongly incurved; subterminal line white defined by black marks before and beyond it, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of black points; cilia chequered brown and black. Hind wing whitish, the veins and terminal area suffused with fuscous; the underside whitish irrorated with fuscous, a dark discoidal point.

Hab. Patagonia, Santa Cruz, type † ♂ in Mus. Paris. *Exp.* 34 millim.

*1358. Polia lebruni.

Apamea lebruni, Mab. Bull. Soc. Philom. (7) ix. p. 63 (1885); id. N. Arch. Mus. (3) i. p. 150, pl. x. f. 10.

♂. Head and thorax pale reddish brown slightly mixed with fuscous; tegulæ with black medial line; patagia edged with black above; thorax with dorsal black streak; abdomen pale reddish brown. Fore wing pale yellowish brown, irrorated and suffused with fuscous except on inner margin and terminal area; the subbasal line double, black filled in with grey, waved, from costa to submedian fold; antemedial line black, defined by grey on inner side, obsolete towards costa, obliquely excurved from subcostal nervure to submedian fold, angled inwards on vein 1 and strongly outwards above inner margin; claviform short, rounded, brown defined by black; orbicular and reniform with brownish centres and grey annuli defined by black, the former small, elliptical, the latter connected by black streaks with the postmedial line, which is minutely dentate and defined by greyish on outer side, bent outwards below costa, excurved to vein 4, then incurved; the subterminal line defined by slight dentate black marks on its inner side and by the pale area beyond it, angled outwards at vein 7 and incurved below vein 3; cilia with two brown lines through them. Hind wing whitish, the terminal area tinged with brown; a diffused waved black subterminal band; the underside irrorated with brown and with brown discoidal point.

Hab. Patagonia, Santa Cruz, type † ♂ in Mus. Paris. *Exp.* 32 millim.

*1359. Polia densa. (Plate LXXXIII. fig. 4.)

Scotogramma densa, Smith, Ins. Life, v. p. 329 (1893); Dyar, Cat. Lep. N. Am. p. 159.
Scotogramma mægra, Smith, Journ. N.Y. Ent. Soc. vii. p. 44 (1899).

♀. Head and thorax brown mixed with grey; antennæ ringed with white; tarsi fuscous ringed with white; abdomen grey irrorated with brown, the ventral surface browner. Fore wing grey, tinged with ochreous and thickly irrorated with dark brown; slight pale streaks in discal and submedian folds; subbasal line represented by black striæ from costa and cell; antemedial line rather ill-defined, oblique, waved, angled inwards on vein 1; claviform a small blackish mark; orbicular and reniform incompletely defined by black, the former round; an indistinct medial line oblique from costa to median nervure; postmedial line rather ill-defined, dentate and produced to short streaks on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line indistinct, pale, defined by fuscous on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia ochreous white and brown, with a brown line through them. Hind wing whitish irrorated with brown, the veins and terminal area suffused with

brown; cilia whitish and brown; the underside white irrorated with brown, a discoidal spot and curved waved postmedial line.

Hab. U.S.A., Colorado, California, Argus Mts., in Coll. J. B. Smith. *Exp.* 36 millim.

*1360. **Polia stretchi.** (Plate LXXXIII. fig. 5.)

Scotogramma stretchii, H. Edw. Can. Ent. xix. p. 146 (1887); Smith, Cat. Noct. N. Am. p. 130.

♂. Head, thorax, and abdomen brown mixed with grey; tarsi fuscous with pale rings. Fore wing pale greyish thickly irrorated with dark brown and black; traces of a subbasal line from costa to submedian fold; antemedial line rather indistinct, oblique, waved, angled inwards on vein 1; claviform represented by a small blackish mark; orbicular and reniform rather indistinctly defined by black, the former round; an indistinct medial shade; postmedial line minutely dentate, bent outwards below costa and incurved below vein 4; subterminal line represented by a series of slight dark marks in the interspaces; a terminal series of small black spots. Hind wing whitish irrorated with brown, the terminal area suffused with brown; the underside whiter, with small discoidal lunule and curved postmedial line.

Hab. U.S.A., Colorado desert, in Coll. J. B. Smith. *Exp.* 32 millim.

1361. **Polia palilis.** (Plate LXXXIII. fig. 6.)

Dianthœcia palilis, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 273 (1875); Smith, Cat. Noct. N. Am. p. 202.

♂. Head and thorax white with a slight brown tinge; sides of palpi and frons black; patagia with some black scales above; tarsi banded with black; abdomen brownish white. Fore wing white, tinged in places with ochreous and irrorated with some large fuscous scales, the terminal area slightly tinged with fuscous narrowing to above tornus; subbasal line indistinct, waved, from costa to submedian fold; antemedial line indistinct, waved, erect; orbicular and reniform very indistinctly defined, with some fuscous scales at centre, the former small, round; a diffused medial fuscous shade expanding into a patch in cell between the stigmata; postmedial line rather indistinct, dentate, bent outwards below costa, excurved to vein 4, then strongly incurved, some pale points beyond it on costa; subterminal line very indistinct, defined by fuscous marks on inner side at costa and below vein 2 and on outer side in discal fold, slightly angled outwards at vein 7 and excurved at middle; a terminal series of dark points. Hind wing pure white; the underside with the costal area slightly irrorated with brown, a black discoidal point.

♀. Head and thorax tinged with fuscous; fore wing much more suffused with fuscous, especially on antemedial, medial, and terminal areas; hind wing suffused with fuscous.

Hab. U.S.A., Texas, 1 ♂, 1 ♀ type. *Exp.* 30–32 millim.

*1362. Polia longiclava. (Plate LXXXIII. fig. 7.)

Mamestra longiclava, Smith, Pr. U.S. Nat. Mus. xiv. p. 265; id. Cat. Noct. N. Am. p. 128.

♂. Head and thorax grey-white mixed with fuscous and some brown; tegulæ with blackish line near tips; patagia edged with blackish; tarsi banded with black; abdomen grey tinged with pale reddish brown. Fore wing narrow, grey-white irrorated with fuscous; the costal area from subbasal to postmedial line and to median nervure suffused with fuscous; a black streak below base of cell; the subbasal line represented by a black striga from costa; the antemedial line very indistinct, excurved below cell; claviform defined by blackish above and at extremity, elongate and extending nearly to postmedial line; orbicular and reniform with brown centres and white annuli, the former oblique elliptical, defined by black, the latter defined on inner side only; postmedial line represented by a black striga from costa and slight streaks on the veins, bent outwards below costa and oblique below vein 4, the costa beyond it dark with white points; subterminal line whitish, defined on inner side by slight dentate brown marks, the area beyond it darker with black streaks on the veins and in submedian fold, angled outwards at vein 7, incurved at discal and submedian folds and excurved at middle; cilia chequered brown and grey. Hind wing white, the veins and terminal area tinged with brown; cilia white with a brown line through them; the underside with the costal and terminal areas irrorated with fuscous, a discoidal point.

Hab. U.S.A., Colorado, in U.S. Nat. Mus. *Exp.* 30 millim.

*1363. Polia doira.

Mamestra doira, Streck. Lep. Rhop. & Het., Suppl. i. p. 7 (1898); Dyar, Cat. Lep. N. Am. p. 156.

Head and thorax pale grey; tegulæ and patagia with slightly darker edges; abdomen white. Fore wing pale grey, the band on costa whitish; a subbasal line ending on the short streak below cell; antemedial line indistinct, double filled in with white; orbicular and reniform with white annuli; postmedial line indistinct, double filled in with white; subterminal line white defined by fuscous; a prominent white streak from reniform above vein 5 to the oblique whitish shade from apex; a large oval white spot before tornus between veins 1 and 2; the veins on postmedial area streaked with brown or black; a fine black terminal line; cilia chequered brown and white. Hind wing white, the veins and termen slightly tinged with brown; the female with traces of discoidal spot and postmedial line.

Hab. U.S.A., Utah. *Exp.* 27 millim. This species is unknown to me.

1364. Polia stenotis, n. sp. (Plate LXXXIII. fig. 8.)

♂. Head and thorax white mixed with black-brown; palpi blackish at sides; frons with black bar; tarsi banded with black; abdomen white tinged with ochreous and irrorated with fuscous. Fore wing narrow, white irrorated with black-brown, the medial area suffused with black-brown; the subbasal line represented by double black striæ from costa and median nervure joined by a short black streak in submedian fold; antemedial line double, oblique, waved, angled inwards on vein 1; claviform short and broad, defined by black; orbicular and reniform moderate, white slightly irrorated with brown and defined by black, the former round; postmedial line double, the outer line indistinct, somewhat dentate, bent outwards below costa, slightly incurved at discal fold, below vein 4 incurved to below end of cell, some white points beyond it on costa; subterminal line defined by a very obscure series of small dentate dark marks on inner side and by the area beyond it being suffused with fuscous, angled outwards at vein 7 and excurved to near termen at middle; cilia chequered brown and white. Hind wing white, the termen more or less strongly tinged with fuscous.

Hab. U.S.A., California (*Walsingham*), 5 ♂ type. *Exp.* 34 millim.

1365. Polia cappa.

Noctua cappa, Hübn. Eur. Schmett., Noct. f. 447 (1827); Dup. Lép. Fr. vi. pl. 99. f. 5; Staud. Cat. Lep. pal. p. 160.

Head and thorax white with a few dark scales; antennæ and tarsi fuscous ringed with white; abdomen white, dorsally tinged with fuscous except at base and extremity. Fore wing white, the medial area tinged with fuscous except towards inner margin; the base slightly tinged with fuscous; subbasal line black, waved, from costa to submedian fold, where there is a small lunule beyond it; a curved mark above inner margin near base; antemedial line double, waved, the inner line indistinct; claviform defined by black, incomplete above; orbicular and reniform white defined by black, incompletely above, the former round, the latter rather irregular and with slight brownish centre; a dentate black medial line; postmedial line double, the inner black, dentate, bent outwards below costa, excurved to vein 4, then oblique, the costa beyond it black with white points; subterminal line slightly defined on each side by fuscous, some small dentate black marks on inner side below costa and at middle, slightly angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia chequered fuscous and white. Hind wing white; the veins tinged with fuscous; traces of a postmedial line, a diffused subterminal band, and a waved line from apex to vein 2; the underside with the costal and terminal areas irrorated with fuscous.

Hab. France, Zeller, Frey, and Sand Colls.; Hungary, Leech

Coll.; Italy; Dalmatia, Leech Coll.; Crete; Russia (*Christoph*); Armenia; Asia Minor, Pontus, Bithynia; W. Siberia, Altai. *Exp.* 34–38 millim.

Larva. Mill. Icones, i. p. 393, pl. 48. ff. 3–6.

Dorsal area pale brown, ventral area pale ochreous; dorsal and lateral lines rufous; subdorsal line double, almost obsolete; stigmata white ringed with black. Food-plants: *Delphinium ajacis* and *D. staphysagria*. 6–8.

1366. Polia dysodea.

Noctua dysodea, Schiff. Wien. Verz. p. 72 (1776); Hübn. Eur. Schmett., Noct. f. 47; Dup. Lép. Fr. vi. p. 404, pl. 98. f. 2; Steph. Ill. Brit. Ent., Haust. iii. p. 32.
Noctua spinaciæ, View. Tab. Verz. Brandenburg, p. 70 (1789).
Noctua flavicincta minor, Esp. Schmett. iv. pl. 153. ff. 6, 7 (1790).
Noctua chrysozona, Borkh. Eur. Schmett. iv. p. 264 (1792); Staud. Cat. Lep. pal. p. 160.
Noctua ranunculina, Haw. Lep. Brit. p. 183 (1809).
Mamestra caduca, Herr.-Schäff. Eur. Schmett. ii. p. 266, Noct. f. 484 (1845).
Mamestra innocens, Staud. Hor. Soc. Ent. Ross. vii. p. 123, pl. 1. f. 10 (1870).
Hecatera kœchlini, Th. Mieg. Le Nat. xi. p. 181 (1889).
Mamestra turbida, Höfm. Jhrb. Kärnt. xxiv. p. 174 (1897).

Head and thorax grey mixed with reddish brown and black; tarsi blackish ringed with white; abdomen grey tinged with rufous and irrorated with fuscous. Fore wing grey-white thickly irrorated with dark brown, the medial area rather darker; some orange-yellow in submedian fold; subbasal line with yellow marks on it and defined by white on outer side, waved from costa to submedian fold; antemedial line oblique, waved, defined by white on inner side and with yellow marks on it; claviform moderate, defined by black; orbicular and reniform defined by black and with some yellow at sides, the former round; an irregularly waved medial line; postmedial line defined by white on outer side, dentate, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line represented by yellow spots on inner side of irregular brown marks; a terminal series of slight dark lunules: cilia chequered ochreous and brown. Hind wing pale tinged with brown, the terminal area dark brown; slight greyish streaks on extremities of veins 2 and 1; cilia pale, with a brown line near base; the underside white, the costal and terminal areas irrorated with brown, a small discoidal spot and waved postmedial line.

Ab. 1. *caduca*. Fore wing whitish grey without the yellow markings.

Ab. 2. *innocens*. Fore wing whitish grey with slight yellow markings, the medial area more prominently dark.—S. Europe, W. & C. Asia.

Ab. 3. Darker, especially the medial area of fore wing.—Kashmir.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Switzerland, Frey Coll.; Sicily, Zeller Coll.; Greece, Leech Coll.; Crete; S. Sweden; Asia Minor, Pontus, Brussa, Zeller Coll.; Syria, Leech Coll.; Persia; W. Turkestan, Turcomania, Saisan, Issyk-kul, Ferghana, Sarawschan; China, 1 ♂, Leech Coll.; Kashmir, Goorais Valley (*Leech*) 1 ♂, (*Pilcher*) 1 ♀. *Exp.* 32–36 millim.

Larva. Meyr. Brit. Lep. p. 82; Barrett, Lep. Brit. iv. p. 218, pl. 161. f. 1.

Pale dull green or yellowish irrorated with brown; dorsal line pale with dark edges; lateral line dark, indistinct; spiracles black; head ochreous brown or dull greenish. Food-plants: flowers of *Sonchus* and *Lactuca*. 7–8.

1367. Polia maderæ. (Plate LXXXIII. fig. 9.)

Mamestra maderæ, Baker, Trans. Ent. Soc. 1891, p. 205, pl. 12. f. 3; Staud. Cat. Lep. pal. p. 160.

♂. Head and thorax grey-white mixed with dark brown and black; palpi blackish with some white; antennæ and tarsi black ringed with white; abdomen grey mixed with dark brown. Fore wing grey thickly irrorated with fuscous; the medial area suffused with brown except towards costa and inner margin; subbasal line double, black filled in with white, waved and angled inwards below cell and on vein 1; claviform large, whitish defined by black except above; orbicular and reniform whitish defined by black, the former round, the latter somewhat angled inwards on median nervure; a waved medial line oblique below the cell; postmedial line defined by white on outer side, dentate, bent outwards below costa and incurved below vein 4, some white points on costa beyond it; subterminal line whitish defined by small dentate black marks on inner side, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of black points; cilia fuscous intersected with grey. Hind wing whitish tinged with brown, the veins and terminal area fuscous; slight greyish marks on termen towards tornus; cilia grey with a brown line through them; the underside white, the costal and terminal areas irrorated with brown, a slight discoidal lunule and waved postmedial line.

Hab. Madeira (*Wollaston*), 1 ♂ type. *Exp.* 36 millim.

1368. Polia serena.

Noctua serena, Schiff. Wien. Verz. p. 84 (1776); Esp. Schmett. iv. pl. 166. f. 4; Hübn. Eur. Schmett., Noct. f. 54; Dup. Lép. Fr. vi. pl. 98. f. 3; Steph. Ill. Brit. Ent., Haust. iii. p. 33; Staud. Cat. Lep. pal. p. 160.
Noctua placida, Esp. Schmett. pl. 166. ff. 5, 6 (1789).
Noctua hieracii, Scriba, Beitr. Ins. p. 195, pl. 13. ff. 1, 2 (1793).
Mamestra monticola, Dup. Lép. Fr. vi. p. 315, pl. 92. f. 4 (1826).
Polia corsica, Rambr. Ann. Soc. Ent. Fr. 1832, p. 279, pl. 9. f. 3.
Polia leuconota, Ev. Bull. Mosc. Soc. 1837, p. 39.
Mamestra bicolorata, Led. Noct. p. 32 (1857).
Hecatera intermedia, Wlk. xv. 1716 (1858).
Mamestra obscura, Staud. Cat. ed. 1, p. 40 (1861).

Head and thorax bluish white with some dark scales; tarsi with dark rings; abdomen white tinged with brown except at base. Fore wing bluish white, the medial area suffused with fuscous brown; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, oblique; claviform moderate, indistinctly defined by black; orbicular and reniform with fuscous centres and whitish annuli defined by black, the former round, the latter slightly angled inwards on median nervure; an irregularly waved medial line; postmedial line double, filled in with white and slightly defined by fuscous on outer side, dentate, bent outwards below costa and incurved below vein 4, the costal area beyond it blackish with some white points on it; subterminal line indistinct, defined on inner side by small dentate black marks at middle, slightly angled outwards at vein 7 and excurved at middle, the area beyond it irrorated with fuscous; a terminal series of small black lunules; cilia chequered black and white. Hind wing whitish irrorated with brown, the veins and terminal area suffused with brown; cilia white with a brownish line through them; the underside white irrorated with brown, a discoidal lunule and curved postmedial line.

Ab. 1. *leuconota*. Ground-colour of head, thorax, and fore wing pure white.

Ab. 2. *obscura*. Darker and more uniform in colour.

Ab. 3. *corsica*. Fore wing with the ground-colour bluish grey, the medial area hardly darker.—Andalusia, Corsica, Sardinia.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Switzerland, Zeller and Frey Colls.; Spain, Andalusia; Corsica; Sardinia; Italy, Capri (*C. S. Browne*); Scandinavia; Finland, Helsingfors, Zeller Coll.; Russia, Urals; Armenia; Asia Minor; Syria, Leech Coll.; W. Siberia, Altai; E. Siberia, Amurland. Hab. ignotus, 1 ♂ type *intermedia*. *Exp.* 30–38 millim.

Larva. Meyr. Brit. Lep. p. 81; Barrett, Lep. Brit. iv. p. 222, pl. 161. f. 2.

Dull yellowish green with dark grey irroration forming obscure blotches; spiracular line yellower, well-marked; head greenish ochreous. Food-plants: flowers of *Sonchus* and *Lactuca*. 7–8.

1369. **Polia olivocincta.** (Plate LXXXIII. fig. 10.)

Hecatera olivocincta, Guen. Noct. ii. p. 30 (1852).
Mamestra folia, Schaus, Trans. Am. Ent. Soc. xxi. p. 227 (1894).

♂. Head and thorax white mixed with pale olive-green; palpi blackish at sides; tarsi banded with fuscous; abdomen pale ochreous. Fore wing white irrorated with purplish grey, the antemedial and medial areas suffused with olive-green; subbasal line waved, black, interrupted, defined by white on outer side; antemedial line black defined by white on inner side, oblique and slightly angled inwards on vein 1; the claviform represented by a narrow black patch on its outer side and with a black streak

from it to postmedial line; orbicular a white annulus with small green centre; reniform a small white lunule with black bar before it; a rather ill-defined and irregular black medial line somewhat angled outwards at median nervure; postmedial line double, the outer indistinct, dentate, strongly bent outwards below costa, excurved to vein 4, then strongly incurved; subterminal line minutely waved, white defined by olive-green on inner side, excurved at vein 7 and middle and angled inwards in submedian fold, olive-green patches with blackish marks on them on its outer side at discal and submedian folds; a terminal series of black points; cilia olive-green intersected with white. Hind wing pale yellowish, the terminal area suffused with brown; cilia olive at base, white at tips; the underside with the costal and apical areas irrorated with brown, a discoidal point.

Hab. Brazil, Rio de Janeiro, 1 ♂, Castro Paraña, type † ♂ *folia* in Coll. Schaus. *Exp.* 34 millim.

1370. Polia marea. (Plate LXXXIII. fig. 11.)

Mamestra marea, Schaus, Trans. Am. Ent. Soc. xxi. p. 227 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 476.

Head ochreous mixed with a few black hairs, the palpi black at sides; thorax purplish rufous, some of the scales tipped with black and white; the tegulæ black at base; tarsi black ringed with white; abdomen ochreous white tinged with fuscous, the dorsal crests tipped with black, the hair at sides and anal tuft rufous. Fore wing whitish, the basal half suffused with reddish brown with pale blue-green fasciæ on costal area, in submedian fold, and on inner margin, the antemedial area with some rough white-tipped scales; subbasal line black, waved, from costa to submedian fold; antemedial line oblique, waved; claviform green, defined by black; orbicular and reniform defined by black, the former round, green with some dark irroration and green above it on costa, the latter constricted at middle, with black centre and incomplete green annulus strongly defined by black; postmedial line minutely dentate, bent outwards below costa, excurved to vein 4, then incurved, some fuscous beyond it from vein 4 to inner margin and some white points on costa; subterminal line defined by ferruginous on inner side, angled outwards at vein 7 and excurved at middle, the area beyond it green except towards apex and with diffused black streaks on the veins, which have white points at their extremities; cilia red-brown intersected by fuscous. Hind wing white, the veins and terminal area suffused with fuscous; cilia white, with a brown line on apical half; the underside with the costal area irrorated with brown, a dark discoidal spot.

Hab. Mexico, Jalapa, 1 ♀; Costa Rica, type † ♂ in Coll. Schaus. *Exp.* 34 millim.

1371. Polia subjecta. (Plate LXXXIII. fig. 12.)

Hadena subjecta, Wlk. xi. 588 (1857).
Mamestra viriditincta, Schaus, J. N.Y. Ent. Soc. xi. p. 230 (1903).

♂. Head and thorax whitish mixed with ochreous, olive-green, and black; pectus and legs whitish irrorated with brown, the tarsi banded with black. Fore wing ochreous whitish suffused in parts with olive-green and with pale pinkish beyond the cell; the medial area rather darker; a waved subbasal line from costa to submedian fold; a black streak above inner margin before the antemedial line, which is oblique from costa to below the cell, where it is angled outwards, angled inwards on vein 1 and strongly outwards above inner margin; orbicular and reniform with rufous centres and ochreous annuli incompletely defined by black, the former round, open above; an ill-defined irregular black medial shade; postmedial line indistinct, bent outwards below costa, oblique to vein 5, where it is acutely angled, then oblique and with short black streaks beyond it on the veins, some black points beyond it on costa; subterminal line only defined by the area beyond it being more suffused with olive except at apex and with black streaks on the veins and a short black streak before it above vein 4, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia chequered fuscous and green. Hind wing ochreous white, the veins of terminal half and termen tinged with fuscous; the underside with the costal area and termen irrorated with brown, a discoidal point and slight postmedial series.

Hab. Cuba (*Schaus*), type † *viriditincta* ♂ in Coll. Schaus; Colombia, Popayan, 2 ♂: Brazil, Castro Paraña, 1 ♂. *Exp.* 34 millim. Type † ♂ in Mus. Oxon.

1372. Polia confusa. (Plate LXXXIII. fig. 13.)

Hecatera confusa, Leech, Trans. Ent. Soc. 1900, p. 96.

♀. Head and thorax white mixed with black; palpi black, whitish at tips; tarsi black ringed with white; abdomen fuscous. Fore wing white irrorated with black and in parts suffused with fuscous; a black streak below base of cell; subbasal line nearly straight, from costa to submedian fold; antemedial line oblique, waved, the costal area before it and the area beyond it clouded with fuscous; claviform represented by a black spot at its extremity, with a small triangular white spot beyond it; orbicular and reniform white defined by black, open above, the former small, rounded; a waved medial line; postmedial line dentate and produced to a series of black and white points on the veins, slightly bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line only defined by a dentate black line before it and some fuscous suffusion beyond it, angled outwards at vein 7 and excurved at middle; a waved terminal black line expanding into spots in the interspaces; cilia chequered white and black. Hind wing fuscous brown, with a

whitish subterminal striga above tornus; cilia fuscous at base, white at tips; the underside whitish irrorated thickly with brown, a discoidal spot, sinuous postmedial line, and some terminal lunules.

Hab. W. China, Ta-chien-lu (*Pratt*), 1 ♀ type. *Exp.* 34 millim.

1373. Polia psittacus.

Mamestra psittacus, Herr.-Schäff. Aussereur. Schmett. p. 80, f. 216 (1850); Druce, Biol. Centr.-Am., Het. i. p. 293.
Valleria jocosa, Schaus, Trans. Am. Ent. Soc. xxi. p. 230 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 487.

Head and thorax bright moss-green with a few brown scales; palpi blackish at side; pectus and legs ochreous, the latter banded with black; abdomen dark brown, the anal tuft and ventral surface ochreous white. Fore wing bright golden green; some of the veins with purplish streaks; the subbasal line represented by double black striæ from costa, and a green striga below cell on a black-brown patch which emits a spur above inner margin; the antemedial line represented by double black striæ from costa, then single, oblique, irregularly waved, and angled inwards on vein 1; the medial area suffused with black from subcostal nervure to vein 1; the orbicular and reniform green, the former small, round, with blackish centre, the latter with its centre slightly defined by blackish; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved and strongly angled outwards on vein 1, the costa beyond it black with pale points; the subterminal line consisting of a series of black lunules which are small except those below costa and in discal and submedian folds, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of black lunules, the cilia intersected with black. Hind wing dark reddish brown; the cilia ochreous, with a fuscous line through them; the underside ochreous, the costal area irrorated with fuscous, a small discoidal lunule and dentate postmedial line with the area beyond it irrorated with fuscous.

Hab. Mexico, Jalapa (*Trujillo*, *Hoege*), 1 ♂, 2 ♀; Guatemala, S. Geronimo (*Champion*), 1 ♂; Costa Rica, Irazu (*Rogers*), 1 ♂, Godman-Salvin Coll.; Venezuela. *Exp.* 30–34 millim. Type † *jocosa* in Coll. Schaus.

1374. Polia pictula.

Dianthœcia pictula, White, Taylor's New Zealand, pl. i. f. 3 (1855); Hudson, New Zealand Moths and Butterflies, p. 19 pl. 4. f. 37.
Mamestra rhodopleura, Meyr. Trans. N. Z. Inst. xix. p. 19 (1886).

♂. Head and thorax black, the scales tipped with grey; vertex of head, basal joint of antennæ, lines near extremity of tegulæ, and upper edge of patagia and the dorsal ridge of thorax golden yellow; pectus with some pink hair; tibiæ banded with yellow; tarsi with pale rings; abdomen black, the hairs tipped with grey, the dorsal crests yellow, broad subdorsal pink stripes except on terminal segment. Fore wing black suffused with leaden grey or rarely with

pale brown, and irrorated with golden yellow; subbasal line black defined by yellow on outer side, waved, from costa to submedian fold, some patches of black and yellow scales between it and the oblique waved antemedial line, which is defined by yellow on inner side; claviform defined by black; orbicular and reniform large, with yellow annuli defined by black; the former irregularly rounded, the latter irregular and sometimes with a white patch on outer side; traces of a waved medial line; postmedial line formed by a series of black and yellow lunules, bent outwards below costa and incurved below vein 4, some yellow points beyond it on costa; subterminal line formed by a series of yellow lunules on black spots, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black and yellow lunules; cilia intersected with yellow. Hind wing fuscous brown, the cilia of inner margin yellow, some grey near tornus and on apical half of cilia. Underside of fore wing with the base of costa pink; hind wing pink, with some brown on termen, becoming a large patch on apical area, a discoidal spot and postmedial line on costal area.

♀. Hind wing with the upperside pink from inner margin to discal fold and vein 6 except on terminal area.

Hab. New Zealand, Auckland (*Bolton*, *Enys*, *J. J. Walker*), 3 ♂, 1 ♀ type, Lake Coleridge, Napier, Wellington. *Exp.* 40 millim.

1375. **Polia spiculosa.** (Plate LXXXIII. fig. 14.)

Mamestra spiculosa, Grote, Can. Ent. xv. p. 28 (1883); Smith, Cat. Noct. N. Am. p. 125.

Head and thorax dark brown, the scales tipped with grey; tarsi ringed with white; abdomen fuscous brown irrorated with grey, the ventral surface tinged with purple. Fore wing brownish, suffused with purple and slightly irrorated with grey, some ochreous in submedian fold; subbasal line double filled in with whitish, waved, from costa to submedian fold; antemedial line double, filled in with whitish, angled outwards below costa and excurved from cell to inner margin; claviform rather large, blackish; orbicular and reniform small, with whitish annuli slightly defined by blackish; the former oblique, pointed above, the latter very narrow, slightly angled inwards on median nervure and placed on a blackish patch which extends to postmedial line, which is double filled in with grey, slightly bent outwards below costa, angled outwards at vein 5, then incurved, the area beyond it paler and redder, with some whitish points on costa; subterminal line pale, angled outwards at vein 7, excurved at middle, and angled inwards in submedian fold, the area beyond it darker; a pale line at base of cilia. Hind wing white, the veins and costal area slightly tinged with brown; the underside with the costal area suffused with purplish and irrorated with brown, a black discoidal lunule and indistinct curved postmedial line.

Hab. U.S.A., Nevada, 1 ♀, Arizona (*Kunzé*), 1 ♂, 2 ♀. *Exp.* 30 millim.

1376. Polia renigera. (Plate LXXXIII. fig. 15.)

Celæna renigera, Steph. Ill. Brit. Ent., Haust. iii. p. 16. pl. xxv. f. 2 (1829); Riley, 1st Rep. Ins. Mo. p. 86, f. 31; Smith, Cat. Noct. N. Am. p. 124.
Celæna herbimacula, Guen. Noct. i. p. 223 (1852).
Celæna infecta, Wlk. x. 263 (1856).

Head and thorax purple-brown mixed with grey; tarsi with white rings; abdomen fuscous brown mixed with grey. Fore wing purple; a black subbasal line from costa to submedian fold, angled outward at median nervure, with an oblique striga beyond it in submedian interspace and a golden-green patch extending to antemedial line; a black patch above inner margin before middle; antemedial line oblique, waved, defined by some pale scales on inner side; claviform moderate, filled in with black; orbicular small, defined by black, incompletely above and below; reniform narrow, oblong, with green centre partly defined by black and white annulus defined by black, the end of cell and area beyond and below it suffused with black; an indistinct medial line angled outwards below cell; postmedial line black, defined on outer side by pale and green scales, minutely waved, bent outwards below costa, angled outwards at vein 5, then incurved, a green patch beyond it in submedian interspace and some pale points on costa; subterminal line formed of slight black marks with green and pale scales on them, angled outwards at vein 7 and excurved at middle, the area beyond it blackish; a series of pale points at base of cilia. Hind wing white, the costal and terminal areas down to vein 2 tinged with fuscous; the underside with the costal and terminal areas to vein 2 irrorated with brown, a slight discoidal point.

Hab. Canada (*Norman*), 2 ♂, Renfrew Co., 8 ♂; U.S.A., E. States, Massachusetts, Beverley, 6 ♂, New York, Trenton Falls (*Doubleday*), 3 ♂, 1 ♀ type *herbimacula* and *infecta*, Evan's Centre (*Grote*), 2 ♂, Georgia, Mississippi, Nebraska, Missouri, 1 ♀, Colorado, Durango (*Oslar*), 2 ♂, 1 ♀. *Exp.* 26–32 millim.

Larva. Head small, shagreened, nearly black, the paler ground showing only in small spots. Body robust, pale sordid brown; dorsal space luteous including a faint brown segmentary lozenge-shaped marking, obscurely cut by dorsal and addorsal lines. A narrow pale obscure subdorsal and lateral line, the lower half of lateral space black-shaded. Substigmatal line broad, pale. Tubercles rather large, brownish black. Cervical shield black-shaded, cut by three pale lines. Leg-plates blackish.—H. G. D.

1377. Polia stricta. (Plate LXXXIII. fig. 18.)

Hadena stricta, Wlk. xxxiii. 728 (1865); Smith, Cat. Noct. N. Am. p. 125.
Mamestra cinnabarina, Grote, Proc. Bost. Soc. Nat. Hist. xvi. p. 241 (1874); Grote, Can. Ent. vii. p. 25 (1875).
Mamestra ferrea, Grote, Can. Ent. xiii. p. 130 (1881).
Mamestra circumcincta, Smith, Proc. U.S. Nat. Mus. xiv. p. 253 (1891); id. Cat. Noct. N. Am. p. 125.

Head and thorax ferruginous red mixed with grey; tarsi fuscous with pale rings; abdomen pale rufous, with the dorsal crests rather darker. Fore wing bright rufous; a waved subbasal line from costa to submedian fold defined by pale colour on outer side; antemedial line oblique, waved, defined by pale colour on inner side; claviform moderate defined by blackish, sometimes at extremity only; orbicular and reniform small, defined by blackish, the former oblique elliptical, with pale annulus, the latter narrow with pure white annulus, its lower extremity slightly angled inwards on median nervure; an indistinct waved medial line oblique from costa to below cell; postmedial line bent outwards below costa, angled outwards at vein 5, then incurved, some pale points on costa beyond it; subterminal line indistinct, pale, defined by the area beyond it being dark brown, angled outwards at vein 7, excurved at middle and to tornus; a terminal series of dark points. Hind wing yellowish suffused with fuscous brown; cilia yellowish white with a brown line through them: the underside pale reddish irrorated with brown, a slight discoidal lunule and sinuous postmedial line.

Ab. 1. *cinnabarina*. Dark brown instead of rufous; fore wing with a purplish tinge, the postmedial area pale rufous except towards costa.

Hab. Canada, Br. Columbia, Sicamons Junction, 1 ♂, Coldstream Ranch, 1 ♂ (*Miss Ricardo*), Vancouver I., 1 ♂, 2 ♀, type *ferrea*, (*Hawkins*) 1 ♂ type, (*J. J. Walker*) 2 ♂; U.S.A., Washington, 1 ♂, 2 ♀, Oregon, California, 3 ♂ type *cinnabarina*. *Exp.* 30 millim.

*1378. Polia ferrealis.

Mamestra ferrealis, Grote, Can. Ent. xv. p. 29 (1883); Smith, Cat. Noct. N. Am. p. 128.

Bright brown, thorax rather pale, the tegulæ and patagia with black lines. Fore wing with the antemedial and postmedial costal areas and inner medial area darker; the subbasal line white; antemedial line oblique, waved; claviform small; orbicular small, round, with dark dot in centre and defined by black; reniform slightly constricted at middle, with two dark spots in centre and whitish annulus defined by black; a blackish medial shade; postmedial line double, black filled in with white, bent outwards below costa and incurved below vein 5; postmedial area suffused with whitish except at costa; subterminal line whitish, defined on inner side by a brown shade and on outer by the terminal area being fuscous except at apex, slightly angled outwards at vein 7 and excurved at middle. Hind wing fuscous; the underside with postmedial line.

Hab. U.S.A., Montana. *Exp.* ? about 32 millim. This species is unknown to me.

1379. Polia lorea. (Plate LXXXIII. fig. 17.)

Hydræcia lorea, Guen. Noct. i. p. 126 (1852); Smith, Cat. Noct. N. Am. p. 127.
Hydræcia ligata, Wlk. Can. Nat. & Geol. v. p. 253 (1860).
Mamestra dodgei, Grote, Can. Ent. vii. p. 90 (1875).

Head and thorax rufous with some dark brown scales; abdomen pale rufous irrorated with brown. Fore wing pale rufous irrorated with darker rufous, the medial area suffused with deep rufous except towards costa and inner margin; the veins streaked with brown; an indistinct waved subbasal line from costa to submedian fold; antemedial line waved, angled outwards below costa, oblique to submedian fold, then erect; claviform small, with very indistinct dark outline; orbicular and reniform with greyish annuli defined by dark brown, the former rather oblique, elliptical, the latter with some fuscous in its lower part; an indistinct waved medial line oblique from costa to lower angle of cell, where it is angled: postmedial line bent outwards below costa, oblique and very slightly sinuous below vein 5; subterminal line indistinct, pale slightly defined by brown on inner side, angled outwards at vein 7 and excurved at middle; a fine dark terminal line. Hind wing fuscous brown with a yellowish tinge; the cilia yellow; the underside yellow irrorated with brown, a dark discoidal point and curved postmedial line.

Hab. Canada (*Norman*), 1 ♂, Renfrew Co., 4 ♂, 1 ♀, Calgary (*Wolley-Dod*), 1 ♂, 1 ♀; U.S.A., E., Middle, and Central States (*Doubleday*), 2 ♂ type, Massachusetts, Beverly, 2 ♂, Buffalo, 1 ♂, New York, Evan's Centre, 1 ♀, Nebraska, Kansas (*Snow*), 1 ♂, 1 ♀, Colorado. *Exp.* 32–36 millim.

Larva. Beuten, Can. Ent. xxii. p. 16.

Head black with sordid whitish markings; body sordid creamy brown, the thorax blackish; dorsum with a series of lozenge-shaped segmentary blackish patches and ill-defined oblique stripes on the sides; vertex whitish; tubercles minute; thoracic feet brown.—H. G. D.

1380. Polia olivacea. (Plate LXXXIII. fig. 18.)

Mamestra olivacea, Morr. Proc. Bost. Soc. N. H. xvii. p. 143 (1874); Grote, Bull. Geol. Surv. iii. p. 797 (1877); Smith, Cat. Noct. N. Am. p. 125.
Mamestra comis, Grote, Can. Ent. xiii. p. 130 (1881).
Mamestra obscurior, Smith, Pr. U.S. Nat. Mus. x. p. 465 (1887).
Mamestra rectilinea, Smith, Proc. U.S. Nat. Mus. x. p. 465 (1887); id. Cat. Noct. N. Am. p. 125.
Celæna hamara, Druce, Biol. Centr.-Am., Het. i. p. 275, pl. 26. f. 27 (1889).
Mamestra lucina, Smith, Trans. Am. Ent. Soc. xxvii. p. 236 (1901).
Mamestra altua, Smith, Trans. Am. Ent. Soc. xxvii. p. 236 (1901).
Mamestra megarena, Smith, Trans. Am. Ent. Soc. xxvii. p. 236 (1901).
Mamestra davena, Smith, Trans. Am. Ent. Soc. xxvii. p. 237 (1901).
Mamestra obnigra, Smith, Trans. Am. Ent. Soc. xxvii. p. 238 (1901).
Mamestra petita, Smith, Trans. Am. Ent. Soc. xxvii. p. 239 (1901).

Head and thorax olive-brown mixed with grey and black;

abdomen dark brown and greyish. Fore wing grey tinged with olive-green and thickly irrorated and suffused with black especially on medial area; an indistinct waved subbasal line from costa to submedian fold defined by greyish on outer side; antemedial line double, nearly evenly excurved from below costa to inner margin and with a dark patch before it on vein 1; claviform moderate, slightly defined by black; orbicular and reniform small, with olive and black centres and grey annuli defined by black; the former oblique elliptical, a rufous spot between them in cell; a dentate medial line oblique from costa to below cell; postmedial line bent outwards below costa, excurved to vein 5, then incurved; the postmedial area paler except at costa, on which there are some pale points; subterminal line indistinct, pale, with a rufous patch before it in submedian interspace, the area beyond it darker except at apex, angled outwards at vein 7, excurved at middle and to tornus; the veins streaked with black towards termen. Hind wing whitish tinged with fuscous, especially on veins and terminal area; the underside white with the costal and terminal areas irrorated with brown, a dark discoidal lunule and sinuous postmedial line.

Ab. 1. *obscurior*. Fore wing much more thickly and evenly irrorated with black.

Ab. 2. *comis*. Fore wing with the reniform and postmedial area whitish.

Ab. 3. *rectilinea*. Fore wing with the postmedial line more oblique and less incurved below vein 5.

Hab. CANADA (*Norman*), 2 ♂, Renfrew Co., 1 ♂, Manitoba, Winnipeg, 1 ♂, Alberta, Calgary (*Wolley-Dod*), 1 ♂, 1 ♀, Vancouver I., 1 ♂, 4 ♀; U.S.A., throughout the Northern, Eastern, and Middle States to Florida, 1 ♂, 1 ♀, Washington, 1 ♂, 2 ♀, Oregon, Corvallis, 1 ♀, Colorado (*Cockerell*), 1 ♂, Glenwood Springs (*Barnes*), 1 ♂, Hall Valley, 1 ♀, Durango (*Oslar*), 1 ♂, 3 ♀, California (*Walsingham*), 1 ♂, 2 ♀; MEXICO, Coatapec (*Brook*), 1 ♂ type *hamara*, Godman-Salvin Coll. *Exp.* 25–30 millim.

Larva. (Original.) Head small, shagreened, dotted, reticulate in black with a black patch at the vertex of each lobe. Body robust, with spicular granules, the setæ swollen. Pale grey-brown; dorsal and subdorsal lines pale, the latter edged below by a series of black segmentary triangular patches. Dorsal diamond-shaped marks grey, faint. Subventral markings obsolete; spiracles black. On joint 12 the subdorsal band is widened by a diffuse ochraceous patch. A general feeder, hiding in the earth which adheres to the rough skin.—H. G. D.

Larva. Var. *comis*. (Original.) Head small, shagreened, reticulations and vertical bands black. Body as in *olivacea*, but with a more pinkish tint; the dorsal diamond-shaped markings much darker, distinct, cut by the pale dorsal line. Substigmatal band broad, pale, reddish filled, fairly well contrasted, its upper edge curved upward in the segmental incisures. The setæ are swollen and the skin rough as in *olivacea*. Spiracles black. A general feeder, hiding in the earth.—H. G. D.

*1381. Polia vau-media.

Mamestra vau-media, Smith, Pr. U.S. Nat. Mus. x. p. 466 (1887); id. Cat. Noct. N. Am. p. 126.

♂. Head and thorax grey largely mixed with fuscous; abdomen fuscous grey. Fore wing dark fuscous grey, the postmedial area paler, tinged with reddish; subbasal line indistinct; antemedial line double, remote from base, even, obliquely curved; claviform represented by a blackish mark; orbicular and reniform small, almost obsolete; postmedial line indistinctly double, slightly curved, incurved below vein 5 and almost touching antemedial line at inner margin; subterminal line pale, irregular, indistinct; a pale spot near tornus. Hind wing fuscous, paler at base; the underside grey with darker irroration.

Hab. U.S.A., Colorado. *Exp.* 23 millim. This species is unknown to me.

1382. Polia subpicta. (Plate LXXXIII. fig. 19.)

Mamestra subpicta, Schaus, J. N.Y. Ent. Soc. vi. p. 111 (1898); Druce, Biol. Centr.-Am., Het. ii. p. 567.

♂. Head and thorax black mixed with grey and some pale brown; tarsi with pale rufous rings, the terminal part of hind tibiæ and the tarsi rufous; abdomen black irrorated with grey, the crests rufous at tips, the anal tuft and ventral surface rufous. Fore wing leaden black slightly irrorated with grey, the ante- and postmedial areas mostly pale brown irrorated with black; an indistinct waved whitish subbasal line from costa to vein 1; a double, waved antemedial line filled in with pale brownish, angled inwards in cell and with the minute claviform on its outer edge; orbicular and reniform small, brownish defined by black, the former round; an indistinct oblique line from lower angle of cell to inner margin; postmedial line bent outwards below costa, excurved to vein 4, then incurved, with short black streaks beyond it on the veins crossing the pale brown area and some pale points on costa; subterminal line represented by an ill-defined series of black and pale brownish dentate marks, slightly angled outwards at vein 7 and excurved at middle; a series of small black spots before termen; cilia slightly chequered with pale brown. Hind wing black-brown, the cilia yellow at tips except at apex. The underside whitish, suffused and irrorated in parts with pink and fuscous: fore wing with black striga from middle of costa, blackish reniform and sinuous postmedial line, the apical half of terminal area black; hind wing with black medial band from costa to median nervure angled inwards in cell, a deep black discoidal spot and indistinct minutely waved postmedial line.

Hab. Mexico, Orizaba, 1 ♂, type † ♂ in Coll. Schaus. *Exp.* 24 millim.

1383. Polia poliastis. (Plate LXXXIII. fig. 20.)

Mamestra poliastis, Hmpsn. Ann. S. Afr. Mus. ii. p. 268 (1902).

Head and thorax white with a slight greenish tinge and with a few black scales; palpi black, pale at tips; tegulæ sometimes with black line near tips; tarsi black ringed with white; abdomen whitish, dorsally tinged with fuscous and with pale segmental lines. Fore wing white tinged with olive-green and more or less thickly striated with black; subbasal line black, waved from costa to submedian fold; antemedial line black, obliquely waved; medial area often tinged with black towards inner margin; claviform and orbicular absent; reniform represented by a black lunule; postmedial line more or less interrupted, dentate and produced to short streaks on the veins, slightly bent outwards below costa and strongly incurved below vein 4; subterminal line sometimes represented by ill-defined black marks at veins 5 and 2; a terminal series of black spots; cilia chequered black and white. Hind wing white, the terminal area tinged with fuscous from apex to vein 2, in female wholly tinged with fuscous, the veins and terminal area suffused with fuscous; the underside usually with slight discoidal lunule and curved postmedial line.

Hab. Br. E. Africa, Machakos (*Crawshay*), 1 ♂ type, Eb Urru (*Betton*), 2 ♀, Nairobi (*Betton*), 1 ♀, Kui (*Betton*), 1 ♀. *Exp.* 28–30 millim.

Subsp. Head, thorax, and fore wing tinged with pale brown instead of green.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♀; Cape Colony, Transkei (*Miss F. Barrett*), 1 ♀.

1384. Polia laudabilis. (Plate LXXXIII. fig. 21.)

Hecatera laudabilis, Guen. Noct. ii. p. 30, pl. 8. f. 4 (1852); Druce, Biol. Centr.-Am., Het. i. p. 291; Smith, Cat. Noct. N. Am. p. 126.
Hapalia indicans, Wlk. x. 359 (1856).
Hecatera strigicollis, Wllgrn. Wien. ent. Mon. iv. p. 170 (1860).
Mamestra illaudabilis, Grote, Can. Ent. vii. p. 27 (1875).

Head and thorax white mixed with pale green; palpi and frons blackish at sides; tegulæ with slight medial blackish line; patagia blackish on outer side; tarsi with black bands; abdomen fuscous, whitish at base, the underside white irrorated with black. Fore wing pale green; a double, waved, black subbasal line filled in with white and interrupted in cell, its lower extremity connected with base by a black streak; antemedial line black defined by white on inner side, oblique, waved; medial area tinged with black from subcostal nervure to submedian fold; the claviform green defined by black; the orbicular and reniform with green centres and white annuli defined by black, the former small, round, open above; an indistinct waved medial line oblique from costa to below cell; a bright red spot between the stigmata and some red beyond claviform; postmedial line black defined by white on outer side,

dentate, bent outwards below costa, excurved to vein 4, then incurved, the costa beyond it with black and white points; subterminal line whitish, defined on inner side by an oblique black shade from costa, then by some more or less obsolescent dentate marks, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia chequered black and white. Hind wing semihyaline white, the costal area and termen tinged with fuscous; cilia with a fuscous line through them; the underside with the costal area irrorated with fuscous.

Ab. 1. Fore wing with the whole medial area suffused with black and without the red marks; orbicular entire.

Ab. 2. *illaudabilis*. The green tinge almost entirely replaced by white.

Ab. 3. Fore wing with the ground-colour white irrorated and suffused with pale rufous.

Hab. U.S.A., New Jersey, Alabama, 1 ♂, Florida, 5 ♂, 1 ♀ type *indicans*, Texas, Dallas (*Boll*), 1 ♀, Colorado, Manitou, 2 ♂, (*Bruce*) 1 ♂, 1 ♀, California, 3 ♂, 2 ♀ type *illaudabilis*; Mexico, Jalapa (*Hoege*, *Trujillo*), 3 ♂, 3 ♀, Cordova (*Rümeli*), 1 ♂; Guatemala (*Champion*), 1 ♂, 2 ♀, Godman-Salvin Coll. *Exp.* 26–38 millim.

Larva. Head small, shagreened, dark reticulate, the vertical bands broad and black. Body sordid and brown, skin pointed granular; dorsal dark diamond-shaped markings; dorsal and subdorsal lines narrow, pale, the latter edged below by triangular black segmentary marks; an indistinct pale waved stigmatal line; substigmatal line broad, pale, ill-defined above. Thoracic feet black-ringed. Spiracles black.—H. G. D.

*1385. **Polia marmica.** (Plate LXXXIII. fig. 22.)

Hecatera marmica, Schaus, J. N.Y. Ent. Soc. vi. p. 112 (1898); Druce, Biol. Centr.-Am., Het. ii. p. 567.

♀. Head and thorax white mixed with black, the head and tegulæ tinged with ochreous; tarsi ringed black and white; abdomen dorsally grey-brown, ventrally white irrorated with brown. Fore wing white, almost wholly suffused with fuscous and irrorated with black, leaving a white patch beyond the subbasal line, which is angled at median nervure and recurved to base above vein 1 and with traces of a similar line beyond it; antemedial line oblique, waved, angled inwards on vein 1; claviform with its extremity slightly defined by black; orbicular and reniform with fuscous centres and greyish annuli defined by black, the former small, oblique; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved, a white patch beyond it from vein 2 to inner margin extending to tornus; subterminal line represented by some small dark dentate marks at middle defined by white on outer side, connected with an apical white patch leaving the medial part of termen fuscous; a terminal series of small black lunules; cilia chequered black and white. Hind wing

semihyaline white, the veins, costal area, and termen down to vein 2 brown; the underside with the costal area irrorated with brown, a discoidal point and some postmedial points on costal half.

Hab. Mexico, Oaxaca, type † ♀ in Coll. Schaus. *Exp.* 32 millim.

1386. Polia quadrilineata. (Plate LXXXIII. fig. 23.)

Mamestra quadrilineata, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 140, pl. 4. f. 15 (1873); Smith, Cat. Noct. N. Am. p. 126.

Head and thorax white more or less strongly mixed with dark brown and black; palpi blackish at sides; frons with black bar; tegulæ with medial black line; patagia edged with black; abdomen whitish irrorated with fuscous. Fore wing bluish white irrorated with pale brown, the medial area and the basal area also in female suffused with black; a black streak below base of cell; subbasal line double, waved, from costa to submedian fold; antemedial line double, the inner not prominent except at costa and inner margin, oblique, minutely waved and slightly angled inwards below costa and at vein 1; claviform small, defined by black; orbicular and reniform small, with brownish centres and white annuli defined by black, the former round, the cell before and between them often suffused with rufous; an indistinct waved medial line oblique from costa to below cell; postmedial line dentate and produced to points on the veins, bent outwards below costa and oblique below vein 4, defined by white on outer side and with a more prominent patch in submedian interspace, the area beyond it blackish with some white points; the veins of terminal area blackish, with a more prominent fascia on vein 2; subterminal line indistinct, dentate, slightly defined by rufous on outer side, angled outwards at vein 7 and excurved at middle; cilia chequered black and white. Hind wing semihyaline white, the termen tinged with brown especially at apex; a dark streak on extremity of vein 2; the underside with brown irroration on costal area and dark discoidal point.

Ab. 1. Head, thorax, and fore wing with the ground-colour grey-green.

Hab. U.S.A., California, 4 ♂, 2 ♀ type, (*Walsingham*) 1 ♀. *Exp.* 30 millim.

Larva. Head sordid brown, heavily dark-banded and reticulate. Body sordid brown, skin pointed granular; markings much as in *laudabilis*, sordid, obscured, the granules marked. Spiracles black. Thoracic feet brown. Setæ stiff, pale, distinct.—H. G. D.

*1387. Polia vittula. (Plate LXXXVI. fig. 13.)

Mamestra vittula, Grote, Trans. Kansas Ac. Sci. viii. p. 48 (1882); Smith, Cat. Noct. N. Am. p. 117.

♀. Head and thorax grey mixed with fuscous; tegulæ black at tips; abdomen pale grey. Fore wing grey suffused and irrorated

with fuscous; a black streak below base of cell; subbasal line represented by double black striæ filled in with pale colour from costa and median nervure; antemedial line double, filled in with pale colour, nearly erect, obsolescent on costal half; medial area darker; claviform short, defined by black; orbicular and reniform small, with greyish annuli defined by black, the former round, the latter narrow; an indistinct curved medial line; postmedial line indistinctly double, filled in with pale colour, bent outwards below costa and strongly incurved below vein 4; postmedial area paler except at costa, on which are some white points; subterminal line pale, defined by the area beyond it being darker, angled outwards at vein 7 and inwards at discal and submedian folds, excurved at middle, defined by black towards inner margin and with a black streak from it to termen in submedian fold; a terminal series of black striæ. Hind wing white, the veins and termen slightly tinged with brown.

Hab. U.S.A., New Mexico, Las Vigas, Hot Springs. *Exp.* 24 millim. This species is unknown to me; figured from a drawing from type in Brooklyn Inst. Arts and Sci.

*1388. **Polia incurva.** (Plate LXXXVI. fig. 14.)

Mamestra incurva, Smith, Pr. U.S. Nat. Mus. x. p. 466 (1887); id. Cat. Noct. N. Am. p. 126.

Head and thorax dark grey; tegulæ with black line; abdomen brownish grey. Fore wing dark grey, irrorated with fuscous and slightly tinged with olive, the medial area rather darker; subbasal line double, ending in a slight black streak; antemedial line double, slightly excurved in interspaces; claviform small, defined by black; orbicular and reniform small, with obscure pale annuli defined by black, the former irregularly rounded, the latter narrow; postmedial line double, filled in with pale colour, bent outwards below costa, slightly incurved at discal fold, strongly below vein 4 and becoming confluent with lower edge of reniform: subterminal line pale, slightly defined by fuscous, angled outwards at vein 7 and slightly excurved at middle, in submedian fold interrupting a short black streak extending to termen. Hind wing white; the underside with the costal area irrorated with fuscous.

Hab. U.S.A., Colorado, New Mexico, Las Vigas, Arizona. *Exp.* 25 millim. This species is unknown to me; figured from a drawing from type in Brooklyn Inst. Arts and Sci.

*1389. **Polia intentata.** (Plate LXXXVI. fig. 15.)

Mamestra intentata, Smith, Ent. News, ix. p. 245 (1898); Dyar, Cat. Lep. N. Am. p. 156.

Head and thorax pale to dark fuscous grey irrorated with black; tegulæ with indistinct medial line and dark tips; patagia with dark edges; abdomen white tinged with brown. Fore wing pale to dark fuscous grey irrorated with black; the medial area with a

yellowish tinge, most prominent below cell; subbasal line double filled in with white or yellowish, ending at vein 1; antemedial line double filled in with white or yellowish, interrupted, waved, somewhat oblique; claviform large, defined by blackish; orbicular and reniform with fuscous centres and whitish annuli defined by black, the former small, round, the latter moderate and somewhat constricted at middle; postmedial line double filled in with yellowish or reddish, minutely waved and produced to white points on the veins, bent outwards below costa, excurved to vein 4, then oblique; subterminal line whitish, defined on each side by fuscous, irregular; a terminal series of black points; cilia pale intersected with fuscous. Hind wing white, the veins and fine terminal line fuscous, in female almost wholly tinged with fuscous, darker on terminal area; the underside with the costal area irrorated with fuscous, the female with postmedial line.

Hab. U.S.A., Colorado, Estes Park. *Exp.* 29–33 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

*1390. **Polia ciniva.** (Plate LXXXIII. fig. 24.)

Mamestra ciniva, Schaus, J. N.Y. Ent. Soc. vi. p. 142 (1898); Druce, Biol. Centr.-Am., Het. ii. p. 567.

♀. Head and thorax mixed black, brown, and white; tegulæ with strong black line near tips; tarsi banded black and white; abdomen brown irrorated with grey, dorsally white irrorated with brown. Fore wing bluish white, thickly irrorated with black and suffused in parts with grey; antemedial line double at costa, then single, oblique to submedian fold and angled inwards on vein 1; claviform small, defined by black; orbicular and reniform defined by black, the former small, round; postmedial line rather indistinct, dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line ill-defined, irregular, with a blackish patch beyond it above tornus with two white points on it; cilia white with fuscous lines through them. Hind wing semihyaline white, the veins and marginal areas tinged with fuscous; the underside with the costal and terminal areas irrorated with fuscous, a small discoidal spot.

Hab. Mexico, Oaxaca, type† ♀ in Coll. Schaus. *Exp.* 24 millim.

1391. **Polia hodeva.**

Hecatera hodeva, Druce, Biol. Centr.-Am., Het. i. p. 291, pl. 27. f. 21 (1889).

♀. Head and thorax clothed with pale brown, white, and black scales; tarsi banded with black; abdomen pale brown, the ventral surface white irrorated with black. Fore wing white, tinged in parts with pale brown and thickly irrorated with black, the medial area suffused with black except on inner area; a black fascia below

base of cell; a waved subbasal line from costa to submedian fold; antemedial line double filled in with white, oblique, waved; claviform with its extremity defined by black; orbicular and reniform with fuscous-brown centres and whitish annuli defined by black, the former small, round; postmedial line defined by whitish on outer side, dentate, indistinctly double towards inner margin, bent outwards below costa, excurved to vein 4, then incurved; subterminal line very ill-defined, whitish, angled outwards at vein 7 and excurved at middle, with blackish patches beyond it at discal and submedian folds; a fine waved terminal line; cilia chequered black and white. Hind wing semihyaline white, the apical area and termen to vein 2 tinged with brown; the underside with the costal area slightly irrorated with brown.

Hab. Guatemala, S. Geronimo (*Champion*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 28 millim.

1392. Polia alboguttata. (Plate LXXXIII. fig. 25.)

Mamestra alboguttata, Grote, Bull. Buff. Soc. Nat. Sci. iii. p. 85 (1877); Smith, Cat. Noct. N. Am. p. 126.

♀. Head and thorax black mixed with white, the head mostly white, the patagia and metathorax with white patches; abdomen fuscous brown, with whitish segmental rings; pectus, legs, and ventral surface of abdomen yellowish white irrorated with brown. Fore wing black, suffused with silvery blue on veins of inner half and on antemedial and postmedial areas; subbasal line black, defined by white on outer side, angled outwards at median nervure and ending at submedian fold; antemedial line defined by white on outer side, oblique, waved, angled inwards on vein 1; claviform obscurely defined by black; orbicular and reniform defined by black, the former small, round, the latter with brownish centre and white annulus; postmedial line defined on outer side by whitish and some rufous at submedian fold, dentate, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line white, defined on inner side by some dentate black marks at middle, angled outwards at vein 7, excurved at middle and to tornus; a terminal series of black points; cilia chequered black and white. Hind wing whitish, the veins, costal and terminal areas tinged with fuscous; the underside irrorated and the terminal area suffused with brown, a small discoidal spot.

Hab. U.S.A., Oregon, 1 ♀ type, California, New Mexico. *Exp.* 32 millim.

1393. Polia erecta. (Plate LXXXIII. fig. 26.)

Celæna erecta, Wlk. x. 264 (1856); Smith, Cat. Noct. N. Am. p. 127.
Perigea constipata, Wlk. xi. 734 (1857).
Perigrapha innexa, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 123 (1874).
Anthophila erecta, Druce, Biol. Centr.-Am., Het. ii. p. 499 (nec Wlk.).

Head and thorax reddish brown, the scales tipped with white; abdomen grey-brown. Fore wing reddish brown thickly irrorated

with purplish grey; subbasal line grey, from costa to submedian fold; antemedial line defined by grey on inner side, oblique from costa to median nervure, then excurved; claviform obsolete; orbicular and reniform defined by grey, the former elliptical, the latter constricted at middle; an oblique dark line from lower angle of cell to inner margin; postmedial line defined by grey on outer side, bent outwards below costa, excurved to vein 4, some pale points beyond it on costa: subterminal line white with some grey suffusion on inner side, excurved below costa and at middle; a fine dark terminal line. Hind wing semihyaline white, the veins and marginal areas tinged with reddish brown; cilia white with a brown line through them; the underside with the costal area irrorated with red-brown.

Hab. U.S.A., E. Florida (*Doubleday*), 1 ♂ type, Texas, 1 ♂, 1 ♀, types *constipata* and *inneata*; Mexico, Jalapa (*Trujillo*), 2 ♀; Guatemala (*Rodriguez*), 1 ♂ Godman-Salvin Coll. *Exp.* 30 millim.

1394. **Polia datis.**

Celæna datis, Druce, A. M. N. H. (6) xiii. p. 359 (1894); id. Biol. Centr.-Am., Het. ii. p. 478, pl. 93. f. 13.
Hadena tepeca, Schaus, Trans. Am. Ent. Soc. xxi. p. 228 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 487.
Mamestra seminaria, Schaus, Trans. Am. Ent. Soc. xxi. p. 227 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 476.
Hadena vigas, Schaus, Trans. Am. Ent. Soc. xxi. p. 229 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 488.
Celæna quadrilineata, Druce, Biol. Centr.-Am., Het. ii. p. 479 (nec Grote).

♂. Head and thorax orange-red mixed with black; tegulæ with medial black line; tarsi black ringed with white; abdomen fuscous. Fore wing orange-red irrorated with black, the veins streaked with blackish; subbasal line double, black, waved, from costa to submedian fold where it emits a streak to base and a slight spur on outer side; antemedial line double, the inner line indistinct, oblique from costa to submedian fold and slightly angled inwards on vein 1; claviform moderate, defined by black; orbicular and reniform small, indistinctly defined by black and with brownish centres, the former round; an obscure medial shade angled outwards on median nervure; postmedial line dentate, bent outwards below costa and oblique below vein 4, defined by whitish on outer side towards inner margin; subterminal line only defined by a blackish patch beyond it on costa; a black streak in terminal part of submedian fold; cilia fuscous, with a whitish line through them. Hind wing white, the costa and termen tinged with fuscous; the underside with the costal area irrorated with brown, a discoidal point and postmedial series of short streaks on the veins.

♀. Thorax grey and brown; fore wing grey suffused with fuscous brown, some orange-red at base and in discal and submedian folds.

Hab. Mexico, Jalapa (*Trujillo*), 4 ♂, 1 ♀ type, Godman-Salvin Coll., types† *tepeca* and *seminaria* in Coll. Schaus, Las Vigas, type† ♂ *vigas* in Coll. Schaus. *Exp.* 28 millim.

1395. Polia rugosa. (Plate LXXXIII. fig. 27.)

Mamestra rugosa, Morr. Proc. Bost. Soc. Nat. Hist. xviii. p. 119 (1875); Smith, Cat. Noct. N. Am. p. 123.

♀. Head and thorax whitish with a few black-brown hairs and scales; abdomen clothed with dark brown and whitish scales. Fore wing whitish, slightly suffused and irrorated with dark brown; the area below base of cell irrorated with some large black scales: subbasal and antemedial lines obsolete; claviform moderate, incompletely defined by black; orbicular and reniform white with brownish centres, defined by the cell before and between them being black, the former oblique oblong, open above and below, the latter oblong, its lower extremity angled inwards on median nervure and confluent with former; postmedial line indistinct, pale, minutely waved, bent outwards below costa and oblique below vein 4, the area before it below the cell suffused with black; subterminal line pale, angled outwards at vein 7 and excurved at middle, defined on inner side by dentate black spots except towards costa, the area beyond it suffused with dark brown: a terminal series of small black lunules. Hind wing pale suffused with red-brown, the terminal area tinged with fuscous; the underside paler, a dark discoidal lunule and diffused subterminal band.

Hab. U.S.A., Maine, 1 ♀. *Exp.* 32 millim.

1396. Polia marinitincta. (Plate LXXXIII. fig. 28.)

Mamestra marinitincta, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 273 (1875); Smith, Cat. Noct. N. Am. p. 126.

Head and thorax white mixed with some blackish scales, the latter tinged with blue-green; palpi and frons black at sides; tegulæ with medial black line, patagia edged with black; tarsi banded with black; abdomen fuscous. Fore wing whitish or pale brownish grey more or less tinged with green and the medial area with black; a sinuous black streak below base of cell; subbasal line black defined by whitish on outer side, angled outwards on median nervure, from costa to vein 1; antemedial line double filled in with whitish, the outer line strong, oblique from costa to submedian fold, angled slightly outwards below costa and strongly on vein 1; claviform small, defined by black; orbicular and reniform small, whitish defined by black, the former rather oblique elliptical; an indistict waved medial line oblique from costa to below cell; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved, a blackish streak beyond it on vein 2 and some white points on costa; subterminal line represented by a series of more or less developed dentate black and white marks, defined on inner side by an oblique black shade from costa, angled outwards at vein 7 and slightly excurved at middle; a terminal series of small black lunules; cilia chequered black and white. Hind wing fuscous black; cilia white with a dark line through

them; the underside whitish irrorated with black, a small discoidal lunule and indistinct sinuous postmedial line.

Hab. U.S.A., Texas, 3 ♂, 2 ♀, type. *Exp.* 30 millim.

1397. **Polia mediana.** (Plate LXXXIII. fig. 29.)

Bryophila mediana, Moore, P. Z. S. 1881, p. 332; Hmpsn. Moths Ind. ii. p. 200.

Head and thorax grey-white mixed with pale brown, the patagia sometimes with a few black scales; abdomen grey suffused with brown. Fore wing grey-white thickly irrorated with dark brown; subbasal line blackish, waved, from costa to submedian fold; antemedial line oblique, waved, angled outwards in cell and above inner margin; medial area dull reddish brown; claviform absent; orbicular and reniform small, conjoined below, usually with brownish centres, the former oblique elliptical; postmedial line dentate, represented by black points on the veins, bent outwards below costa, incurved at discal fold and strongly below vein 4; subterminal line only defined by the area beyond it being clouded with brown, angled outwards at veins 7 and 4 and inwards at discal and submedian folds; a terminal series of black points. Hind wing fuscous brown; the underside grey irrorated with brown, a dark discoidal point and curved postmedial line with black points at the veins.

Hab. Punjab, Kulu, Sultanpur (*G. Young*, *Pilcher*), 2 ♂, 6 ♀, Simla (*Reed*), 2 ♀ type, Subathu (*Harford*), 1 ♀. *Exp.* 30–34 millim.

1398. **Polia fasciata.** (Plate LXXXIII. fig. 30.)

Hecatera fasciata, Leech, Trans. Ent. Soc. 1889, p. 134, pl. ix. f. 8.

♀. Head and thorax grey mixed with dull brown; abdomen grey suffused with brown. Fore wing grey thickly irrorated with dark brown; the subbasal line represented by a patch on costa and spot below cell; the ante- and postmedial lines only defined by the medial areas being fuscous brown, the former oblique, waved, angled outwards in cell and above inner margin, the latter somewhat dentate, angled outwards below costa, incurved at discal fold and strongly below vein 4; stigmata absent; subterminal line only defined by the area beyond it being dark brown, angled outwards at veins 7 and 4 and inwards in discal and submedian folds. Hind wing fuscous brown; the underside grey irrorated with brown; a small discoidal spot and curved postmedial line.

Hab. Centr. China, Kiukiang (*Pratt*), 1 ♀ type. *Exp.* 34 millim.

*1399. **Polia roseosuffusa.** (Plate LXXXVI. fig. 12.)

Mamestra roseosuffusa, Smith, Proc. U.S. Nat. Mus. xxii. p. 466 (1900); Dyar. Cat. Lep. N. Am. p. 156.

♂. Head and thorax whitish mixed with grey and tinged with

rosy pink; abdomen yellowish fuscous. Fore wing whitish suffused with rosy pink and tinged with fuscous to the medial shade, on postmedial area at costa, middle and inner margin, and on terminal area except at apex; subbasal line double filled in with whitish, waved; antemedial line double filled in with whitish, oblique, waved; claviform hardly traceable; orbicular small, very indistinct, with whitish annulus; reniform represented by a little dark shading; a fuscous medial shade; postmedial line fine, single, crenulate, slightly bent outwards below costa and incurved below vein 4; subterminal line whitish, defined by the dark patches before it and terminal area, slightly angled outwards at vein 7 and excurved at middle; a terminal series of dark points; cilia chequered pale and fuscous. Hind wing yellowish suffused with brown: the underside pale yellowish.

Hab. U.S.A., Arizona. *Exp.* 28 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

1400. **Polia renisigna.** (Plate LXXXIII. fig. 31.)

Celæna renisigna, Wlk. x. 267 (1856).
Dianthœcia prætermissa, Wlk. xi. 506 (1857).
Hadena depulsa, Wlk. xi. 590 (1857).
Hadena inculta, Wlk. Trans. Ent. Soc. (3) i. p. 88 (1862).
Hadena ficita, Wlk. xxxiii. 734 (1865).
Hadena contracta, Wlk. xxxiii. 735 (1865).
Hadena servilis, Wlk. xxxiii. 736 (1865).

Head and thorax purplish red-brown more or less strongly mixed with grey and black; tegulæ with medial black line; tarsi with ochreous rings; abdomen fuscous brown mixed with grey. Fore wing purplish red-brown to purplish fuscous mixed with grey; subbasal line double, waved, from costa to submedian fold; antemedial line defined by pale colour on inner side, angled outwards below costa, oblique to vein 1, then bent inwards; claviform moderate or small, defined or filled in with black; orbicular and reniform defined by black, small, the former round, oblique elliptical, or oblique V-shaped, sometimes filled in with white, the latter narrow with brown centre and pale annulus, becoming white below, angled inwards on median nervure; traces of a medial line oblique to median nervure; a blackish patch between reniform and postmedial line, which is bent outwards below costa and incurved below vein 4, somewhat dentate and produced to short streaks on the veins, ending in pale points, some pale points on costa beyond it; subterminal line formed by a series of small whitish and black marks, angled outwards at vein 7 and dentate at veins 4, 3, the area beyond it rather darker; a fine terminal black line: a series of pale points at base of cilia. Hind wing uniform fuscous brown, or the basal half more or less whitish; cilia white at tips; the underside whitish or reddish irrorated with black, a discoidal spot and curved postmedial line.

Hab. Br. E. Africa, Nairobi (*Betton*), 2 ♀, Kikuyu (*Crawshay, Betton*), 3 ♂, 3 ♀, Neugia (*Crawshay*), 1 ♀, Ndimu (*Betton*), 3 ♀, Morendat (*Betton*); 1 ♂, Nairowa (*Betton*), 1 ♀, Kilima-njaro (*Hannington*), 1 ♀; Delagoa Bay (*Junod*), 1 ♂, 1 ♀; Transvaal, Piet Retief (*Crawshay*), 3 ♂; Natal, Estcourt (*Hutchinson*), 6 ♂, 1 ♀, Howick, 1 ♀, Durban (*Leigh*), 3 ♀; Basutoland, Maseru (*Crawshay*), 3 ♂; Cape Colony, Kenilworth, 1 ♂ (*Dr. Smith*), 6 ♀, type and types *prætermissa* and *depulsa*, Knysna (*Trimen*), 1 ♂, 2 ♀, type *contracta*, Annshaw (*Miss F. Barrett*), 1 ♂, Cape Town (*Trimen, Lightfoot*), 1 ♂, 1 ♀, type *ficita*. *Exp.* 26–36 millim. Types † *inculta* and *servilis* in Mus. Oxon.

*1401. Polia goniophora. (Plate LXXXIII. fig. 32.)

Mamestra goniophora, Schaus, J. N.Y. Ent. Soc. xi. p. 231 (1903).

♂. Head and thorax olive-green, some of the scales tipped with white; palpi blackish at sides; legs mixed with black and white; abdomen whitish, pale brown, and black. Fore wing olive-green, the disk suffused with brown; a white subbasal line from costa to submedian fold, dentate outwards in cell; antemedial line represented by white spots on costa and inner margin, then by an obscure dark line with an oblique striga below costa and point on median nervure; orbicular a small round white spot, reniform an oblique white bar, angled inwards in lower end of cell; postmedial line obscure, dark, dentate, with white spots at costa and inner margin, some white points on the portion bent outwards below costa and white points at extremity of teeth on veins 4, 3, 2; subterminal line indistinct, dark, irregular, with white spots on it towards apex, a white spot at inner margin and three white spots beyond it on middle of termen. Hind wing fuscous brown, with some obscure white spots on termen; the cilia ochreous; underside whitish irrorated with large black scales, a black discoidal lunule on a rather indistinct medial line, a sinuous postmedial line.

Hab. Brazil, Castro Paraña, type † ♂ in Coll. Schaus. *Exp.* 28 millim.

*1402. Polia rudis. (Plate LXXXIV. fig. 1.)

Pastona rudis, Wlk. xv. 1754 (1858).
Magusa alboguttalis, Wlk. xxxiv. 1224 (1865).

♂. Head and thorax olive-brown, the hairs pale at base, the scales tipped with white; tarsi ringed with white; abdomen dark brown, the ventral surface whitish. Fore wing dark brown irrorated with black and slightly with white; a white spot at base; a waved white subbasal line from costa to submedian fold; an interrupted waved white antemedial line; orbicular and reniform white, the former small, round, the latter elliptical; postmedial line represented by a series of white points, bent outwards below costa and oblique below vein 4, with larger spots displaced inwards at discal and submedian folds, some white points beyond it on costa; subterminal line

represented by a series of small white spots, angled outwards at vein 7, inwards at discal and submedian folds, and excurved at middle. Hind wing dark brown, with a series of rather ill-defined white spots just before termen; the underside brownish white irrorated with some large black scales on basal half, a discoidal lunule and curved postmedial line.

Hab. Brazil, Theresopolis. *Exp.* 30 millim.

1403. Polia esopis.

Celæna esopis, Druce, Biol. Centr.-Am., Het. i. p. 275, pl. xxvii. f. 1 (1889).

♂. Head and thorax ochreous mixed with dark brown; tarsi with yellow rings; abdomen fuscous. Fore wing reddish brown suffused in parts with black; a waved subbasal line from costa to submedian fold defined by ochreous on outer side; antemedial line double, irregularly waved, filled in with ochreous; claviform represented by a slight black mark; orbicular a small black annulus; reniform ochreous, incompletely defined by black; an indistinct waved medial line with the area between it and postmedial line dark brown; postmedial line defined by ochreous white on outer side, oblique from costa to vein 6, incurved below vein 5 and retracted to inner margin, the veins beyond it slightly streaked with white and some pale points on costa; the subterminal line somewhat dentate, whitish towards costa, defined on inner side by a dark patch at costa and by a slight dark shade from middle to inner margin, the area beyond it dark brown with patches of white suffusion at apex and between veins 4 and 2; a terminal series of black points; cilia chequered brown and ochreous. Hind wing dark brown; the cilia ochreous with a dark line at base; the underside paler brown, the costal area irrorated with large whitish scales extending to vein 5 beyond the cell, a dark discoidal spot and curved postmedial line.

Hab. Guatemala, Totonicapam (*Champion*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 28 millim.

1404. Polia bohemanni.

Anarta bohemanni, Staud. Stett. ent. Zeit. 1861, p. 370; Mill. Ic. i. pl. 39. f. 6; Staud. Cat. Lep. pal. p. 218.

♂. Head, thorax, and abdomen dark brown slightly mixed with grey. Fore wing dark brown irrorated with grey; subbasal line represented by dark marks below costa and cell, defined by grey on outer side; antemedial line defined by grey on inner side, curved and angled inwards on vein 1; claviform indistinctly defined by black; orbicular and reniform small, with greyish annuli defined by black, the former round; a dark medial shade; postmedial line somewhat dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line very indistinct, grey, dentate; cilia chequered brown and yellowish. Hind wing orange-yellow; a

brown discoidal point and rather broad terminal band; cilia chequered brown and yellow; the underside with the costal and terminal areas suffused with brown, a discoidal lunule.

Hab. Scandinavia, Lapland, 1 ♂; Arctic Russia; N.E. Siberia. *Exp.* 32 millim.

1405. **Polia secedens.** (Plate LXXXIV. fig. 2.)

Plusia secedens, Wlk. xii. 913 (1857); Smith, Cat. Noct. N. Am. p. 294.

♂. Head and thorax black-brown mixed with white scales and hairs; abdomen dark brown with the dorsal crests blackish. Fore wing dark brown slightly irrorated with white; an indistinct waved black subbasal line from costa to submedian fold; an oblique slightly waved antemedial line; claviform with its extremity defined by black; orbicular and reniform rather small, the former round, the latter open above and below; postmedial line somewhat dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line represented by a series of dentate black marks defined by white scales on inner side; cilia intersected with white. Hind wing bright yellow, the costal and terminal areas dark brown with diffused edges; cilia yellow at tips: the underside with brown discoidal lunule conjoined to the costal area.

Hab. Canada, Hudson's Bay, St. Martin's Falls (*Dr. Barnston*), 1 ♂ type. *Exp.* 32 millim.

b. (*Harmodia.*) Abdomen of female with the extremity produced and conical, the ovipositor exserted.
  a^1. Fore wing with the subterminal line strongly dentate on veins 4, 3 and forming a distinct ≷-mark.
    a^2. Fore wing with the reniform strongly angled inwards on median nervure and connected with the orbicular or nearly so ..... *cucubali.*
    b^2. Fore wing with the reniform well separated from the orbicular.
      a^3. Fore wing with the orbicular oblique elliptical ... *bicruris.*
      b^3. Fore wing with the orbicular rounded.
        a^4. Fore wing with the antemedial line oblique, double ..... *carpophaga.*
        b^4. Fore wing with the antemedial line erect, single. *lypra.*
  b^1. Fore wing with the subterminal line not forming a ≷-mark on veins 4, 3.
    a^2. Fore wing without white patch on medial area.
      a^3. Fore wing with the ground-colour olive-brown ... *magnolii.*
      b^3. Fore wing with the ground-colour grey and dark brown.
        a^4. Fore wing with orange fulvous on ante- and postmedial areas ..... *filigramma.*
        b^4. Fore wing without orange fulvous on ante- and postmedial areas.
          a^5. Fore wing with the postmedial line incurved below vein 4 ..... *tephroleuca.*
          b^5. Fore wing with the postmedial line oblique below vein 4 ..... *pumila.*

b^2. Fore wing with white patch on medial area.
  a^3. Fore wing with the white patch not extending below submedian fold.
    a^4. Fore wing olive-brown not suffused with fuscous ..... *albimacula.*
    b^4. Fore wing olive-brown suffused with fuscous ... *conspersa.*
  b^3. Fore wing with the white patch extending to inner margin.
    a^4. Fore wing with the claviform large, forming part of the dark area ..... *compta.*
    b^4. Fore wing with the claviform absent ..... *guenei.*

1406. Polia cucubali.

Noctua cucubali, Schiff. Wien. Verz. p. 84 (1776); Esp. Schmett. iv. pl. 173. f. 6; Hübn. Eur. Schmett., Noct. f. 56; Dup. Lép. Fr. vi. p. 331, pl. 93. f. 5; Steph. Ill. Brit. Ent., Haust. ii. p. 187; Curt. Brit. Ent. p. 308; Staud. Cat. Lep. pal. p. 163.
Noctua rivularis, Fabr. Spec. Ins. ii. p. 234 (1781).
Noctua rivosa, Ström. Dansk. Vid. Selsk. Skr. p. 77 (1783).
Noctua behensis, Frr. Beitr. v. p. 142, pl. 467. f. 4 (1831).
Dianthœcia mandarina, Leech, Trans. Ent. Soc. 1900, p. 51.

Head and thorax red-brown mixed with purple, grey, and dark scales; tarsi with pale rings; abdomen grey-brown. Fore wing red-brown, irrorated with fuscous and suffused with violaceous especially near the lines; subbasal line double, waved, from costa to

Fig. 26.—*Polia cucubali*, ♀. ½.

submedian fold; antemedial line double, waved; claviform large, suffused with and defined by black; orbicular and reniform with brown centres and yellow annuli defined by black, the former oblique elliptical, usually conjoined to the latter, which is more or less angled inwards on median nervure; an indistinct waved medial line; postmedial line double, the inner crenulate, bent outwards below costa, excurved to vein 4, then strongly incurved, some white points beyond it on costa; subterminal line yellow, defined on inner side by diffused blackish, somewhat dentate marks and some diffused black on outer, angled outwards at vein 7, dentate at veins 4, 3, and excurved to tornus; a terminal series of small black lunules. Hind wing pale, suffused with reddish brown especially on terminal area and in female; the underside pale irrorated with red-brown, a small discoidal spot and curved postmedial and subterminal lines.

Ab. 1. *mandarina*. Darker, browner, and without the violaceous tinge; the annuli of stigmata and subterminal line whiter.—Japan, China.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Russia, Livonia, Zeller Coll.; Armenia; Asia Minor, Pontus; Kurdistan; W. Turkestan, Issyk-kul; Amurland, Ussuri; Japan, Hakodaté (*Andrews*), 7 ♂, 1 ♀, Yokohama (*Manley*, *Jonas*), 1 ♂, 1 ♀, Tokio (*Maries*), 1 ♂, Oiwake (*Pryer*), 1 ♂, Tsuruga (*Leech*), 1 ♀; China, Chusan (*J. J. Walker*), 1 ♂, Chia-kou-ho (*Pratt*), 1 ♂, Psu-tu-fang, 1 ♂ type. *Exp.* 32–36 millim.

Larva. Meyr. Brit. Lep. p. 79; Barrett, Lep. Brit. iv. p. 238, pl. 163. f. 1.

Greenish grey tinged with orange and with numerous white dots; dorsal line brown; a subdorsal series of oblique brown marks; head with dark markings. Food-plants: leaves and seed-capsules of *Silene* and *Lychnis*. 7–8.

1407. Polia bicruris.

Phalæna bicruris, Hüfn. Berl. Mag. iii. 3, p. 302 (1766).
Noctua capsincola, Schiff. Wien. Verz. p. 84 (1776); Esp. Schmett. iv. pl. 173. f. 5; Hübn. Eur. Schmett., Noct. f. 57; Dup. Lép. Fr. vi. p. 334, pl. 93. f. 6; Steph. Ill. Brit. Ent., Haust. ii. p. 188; Staud. Cat. Lep. pal. p. 163.
Noctua impressa, Esp. Schmett. iv. pl. 152. f. 3 (1788).

Head and thorax reddish brown mixed with grey and some blackish scales; tegulæ with dark medial line; tarsi ringed with white; abdomen pale grey-brown. Fore wing reddish brown irrorated with black and some white scales; subbasal line double, waved, from costa to submedian fold; some dark scales above inner margin near base; antemedial line double, waved, angled outwards above inner margin; claviform large, suffused with black and defined by black; orbicular and reniform with brown centres and white annuli defined by black, the former rather irregularly oblique elliptical; an indistinct waved medial line; postmedial line double, crenulate, bent outwards below costa, excurved to vein 4, then strongly incurved, some white points beyond it on costa; subterminal line white, with some diffused fuscous, somewhat dentate marks on its inner side, strongest in submedian fold, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules defined by whitish; cilia intersected with white. Hind wing whitish suffused with brown, deepest on terminal area; cilia whitish, with a brown line through them; the underside whitish irrorated with brown, a discoidal spot and curved postmedial and subterminal lines.

Hab. Britain, Leech Coll.; France; Germany, Zeller and Leech Colls.; Austria; Switzerland, Frey Coll.; Spain; Italy; Scandinavia; Russia, Livonia, Zeller Coll., Crimea; Armenia; W. Turkestan, Issyk-kul; W. Siberia, Altai. *Exp.* 30–40 millim.

Larva. Meyr. Brit. Lep. p. 79; Barrett, Lep. Brit. iv. p. 242, pl. 163. f. 2.

Light brownish ochreous irrorated with brown; dorsal line pale, indistinct, traversing a series of dark V-shaped marks; head with dark markings. Food-plants: seed-capsules of *Silene* and *Lychnis*, 7–9.

1408. **Polia carpophaga.**

Noctua carpophaga, Borkh. Eur. Schmett. iv. p. 422 (1792); Dup. Lép. Fr. vi. p. 305, pl. 92. f. 1; Staud. Cat. Lep. pal. p. 163.
Noctua ochracea, Haw. Lep. Brit. p. 199 (1809).
Noctua perplexa, Hübn. Eur. Schmett., Noct. f. 89 (1827).
Dianthœcia capsophila, Boisd. Ind. Meth. p. 125 (1840); Dup. Lép. Fr., Suppl. iv. p. 100, pl. 58. f. 8 (1842).
Dianthœcia nisus, Herr.-Schäff. Schmett. Eur. ii. p. 249, pl. 90. f. 461 (1845), nec Germ.
Opigena repanda, Herr.-Schäff. Eur. Schmett. ii. p. 330, Noct. f. 61 (1845).
Dianthœcia capsophoba, Rmbr. Cat. Lep. S. And. pl. 9. f. 2 (1858).
Dianthœcia pallida, Tutt, Brit. Noct. iii. p. 30 (1892).

Head and thorax dull red-brown mixed with some grey and black; tarsi with pale rings; abdomen pale reddish brown. Fore wing dull reddish brown slightly irrorated with black, the lines usually filled in with greyish; subbasal line double, waved, from costa to submedian fold; a curved black mark above inner margin near base; antemedial line double, waved, oblique; claviform moderate, defined by black; orbicular and reniform with brown centres and white annuli defined by black, the former round; a waved medial line; postmedial line double, the inner lunulate, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line white, defined on inner side by some dentate black marks, angled outwards at vein 7 and dentate at veins 4, 3, then incurved; a terminal series of small black lunules defined by whitish; cilia intersected with whitish. Hind wing pale suffused with reddish brown, especially on terminal area; cilia pale, with a rufous line through them; the underside whitish irrorated with red-brown, a slight discoidal lunule, sinuous postmedial line, and diffused subterminal line.

Ab. 1. *ochracea*. Ground-colour ochreous to pale reddish brown.

Ab. 2. *capsophila*. Ground-colour dark brown, the thorax and fore wing more variegated with grey.

Hab. Britain, Scotland, Leech Coll., I. of Man (*Gregson*), England (*Doubleday*), Ireland, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Switzerland, Leech Coll.; Corsica; Spain; Italy, Capri (*C. S. Browne*); Dalmatia, Frey and Leech Colls.; Russia, Livonia, Zeller Coll.; Crimea; Armenia; Asia Minor, Pontus, Bithynia, Mardin; Syria; W. Turkestan, Ferghana, Askabad; E. Turkestan, Ili; W. Siberia, Altai. *Exp.* 26–34 millim.

Larva. Meyr. Brit. Lep. p. 79; Barrett, Lep. Brit. iv. p. 233, pl. 162.

Pale greyish ochreous or brownish ochreous; dorsal, subdorsal, and spiracular lines pale; head light brown with darker markings. Food-plants: seed-capsules of *Silene inflata* and *S. maritima*. 7–8.

*1409. **Polia lypra.** (Plate LXXXIV. fig. 3.)

Dianthœcia lypra, Püng. Iris, xvi. p. 287, pl. vi. f. 3 (1904).

♀. Head, thorax, and abdomen grey tinged with olive-brown

and mixed with fuscous; tarsi banded with black. Fore wing brownish grey, almost entirely suffused with pale olive-brown; subbasal line black, waved from costa to submedian fold; antemedial line minutely waved, erect, stronger in submedian fold; claviform represented by a V-shaped black mark at its extremity; orbicular and reniform moderate, whitish, incompletely defined by black, the former round; postmedial line dentate, strongly bent outwards below costa and incurved below vein 4, thickened in submedian fold, some pale points on costa beyond it; subterminal line pale, defined on inner side by slight dentate black marks below costa and at middle, angled outwards at vein 7, dentate at veins 4, 3 and forming a rather obscure ≷-mark; a terminal series of small black lunules; cilia ochreous grey mixed with fuscous. Hind wing pale with an ochreous tinge and almost uniformly suffused with fuscous; cilia ochreous, with an obscure fuscous line near base; underside grey-white slightly irrorated with fuscous, a small discoidal spot and curved postmedial line, the area beyond it suffused with fuscous.

Hab. W. Turkestan, Askabad, type † in Coll. Püngeler. *Exp.* 32 millim.

1410. Polia magnolii.

Dianthœcia magnolii, Boisd. Ind. Meth. p. 125 (1829); Dup. Lép. Fr., Suppl. iii. p. 241, pl. 22. f. 4; Herr.-Schäff. Eur. Schmett., Noct. f. 71; Staud. Cat. Lep. pal. p. 162.

Miselia nummosa, Ev. Faun. Volg. Ur. p. 232 (1844); Frr. Beitr. iv. pl. 351. f. 5.

Head and thorax olive-brown mixed with white and black; tarsi ringed with white; abdomen grey-brown. Fore wing olive-brown with a reddish tinge, sparsely irrorated with white, chiefly on the veins, and slightly suffused with black; a whitish patch at base of costa traversed by the double, waved, black subbasal line from costa to submedian fold; antemedial line double, waved, filled in with white; claviform large, defined by black; orbicular and reniform with brown centres and white annuli defined by black, the former round, the latter rather irregular and with its outer edge indented; a medial shade, oblique to median nervure, then somewhat dentate; postmedial line defined by white on outer side, strongly dentate, bent outwards below costa and strongly incurved below vein 4, some white points beyond it on costa; subterminal line white, defined on inner side by a series of small dentate black marks, angled outwards at vein 7 and somewhat dentate at veins 4, 3; a terminal series of small black lunules defined by white; cilia intersected with white. Hind wing ochreous white slightly irrorated with brown, the veins and marginal areas strongly suffused with brown; cilia with a brown line near base; the underside with discoidal spot, sinuous postmedial line, and diffused subterminal band.

Hab. France, Sand Coll.; Switzerland, Zeller, Frey, and Leech Colls.; Austria; Italy, Capri (*C. S. Browne*); Dalmatia; Russia,

Sarepta; Armenia; Asia Minor, Pontus, Antioch, Mardin; W. Turkestan, Ferghana. *Exp.* 36–40 millim.

Subsp. *conspurcata*. Frr. Neue Beitr. Schmett. v. p. 82, pl. 430. f. 3 (1845); Herr.-Schäff. Eur. Schmett., Noct. ff. 463, 470; Staud. Cat. Lep. pal. p. 162.

Head, thorax, and fore wing grey-brown without the rufous tinge, the last with the claviform reduced to a small black mark, the orbicular oblique elliptical, the reniform slightly angled inwards on median nervure but not on subcostal nervure.

Hab. C. and S. Russia, Urals; W. Siberia, Altai; ? E. Siberia; Punjab, Hunza (*Sir M. Conway*), 1 ♂.

Larva. Wullschlegel, Stett. ent. Zeit. xxxii. p. 406.

Pale reddish grey with a dark maculate dorsal stripe, oblique subdorsal marks, and pale lateral line. Food-plant: *Silene nutans*. 8–9.

1411. Polia filigramma.

Noctua filigramma, Esp. Schmett. iv. p. 396, pl. 130. f. 4 (1788); Dup. Lép. Fr. vi. p. 413, pl. 98. f. 5; Herr.-Schäff. Eur. Schmett., Noct. f. 465; Staud. Cat. Lep. pal. p. 162.
Noctua polymita, Hübn. Eur. Schmett., Noct. f. 48 (1827), nec Linn.
Noctua flavivibica, Hübn. Eur. Schmett., Text, p. 171 (1827).
Noctua xanthocyanea, Hübn. Eur. Schmett., Noct. ff. 640–1 (1827).
Dianthœcia luteocincta, Rmbr. Ann. Soc. Ent. Fr. 1834, p. 382, pl. 8. f. 1; Mill. Ann. Soc. Cannes, 1878, pl. 3. f. 10.
Dianthœcia xanthofusca, Guen. Ann. Soc. Ent. Fr. 1841, p. 243.
Dianthœcia melanochroa, Staud. Iris, iv. p. 273 (1891).

Head and thorax reddish ochreous mixed with fuscous brown; tarsi with whitish rings; abdomen grey-brown. Fore wing pale brown, more or less strongly suffused and irrorated with fuscous; some rufous below base of costa, in base of submedian fold, and above inner margin; subbasal line ill-defined, double, waved, from costa to submedian fold; antemedial line waved; claviform short, filled in with rufous; orbicular and reniform with brown centres and rufous annuli defined by black, the former round; medial line oblique to median nervure, then dentate; postmedial line strongly dentate, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line pale, defined by diffuse dentate rufous marks on inner side, slightly angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing fuscous brown, the terminal area darker; cilia ochreous white, with a brown line through them; the underside pale, the costal and terminal areas suffused with brown, a dark discoidal spot and curved postmedial line.

Ab. 1. *xanthocyanea*. Head, thorax, and fore wing irrorated with white, the ground-colour fuscous and grey without the reddish-brown tinge.

Ab. 2. *luteocincta*. Paler and more mixed with white, especially on medial and terminal areas of fore wing.

Ab. 3. *melanochroa*. Smaller and darker; fore wing slightly mixed with white and rufous.—Asia Minor; W. Turkestan.

Hab. France, Saud Coll.; Germany, Zeller and Leech Colls.;

Austria, Zeller Coll. ; Hungary, Zeller and D'Emmick Colls. ; Switzerland, Frey Coll. ; Italy ; Dalmatia ; Scandinavia ; Lapland, Leech Coll. ; Russia, Sarepta, Zeller and Frey Colls., Urals ; Armenia ; Asia Minor, Pontus, Taurus ; Syria, 1 ♂ ; Persia ; W. Turkestan, Turcomania, Saisan, Ferghana, Issyk-kul, Ala-Tau ; W. Siberia, Altai ; E. Turkestan, Ili. *Exp.* 30–40 millim.

Larva. Feeds on *Silene nutans*. 7–8.

1412. Polia tephroleuca.

Dianthœcia tephroleuca, Boisd. Ann. Soc. Ent. Fr. 1833, p. 374, pl. 14. f. 4 ; Dup. Lép. Fr., Suppl. iii. p. 244, pl. 22. f. 5 ; Herr.-Schäff. Eur. Schmett., Noct. ff. 140, 469 ; Staud. Cat. Lep. pal. p. 162.

♂. Head and thorax grey mixed with fuscous brown ; tegulæ with black medial line ; tarsi ringed with white ; abdomen grey-brown. Fore wing grey-white suffused and irrorated with fuscous brown ; subbasal line double, waved, from costa to submedian fold ; antemedial line double, waved, filled in with whitish ; claviform very small, defined by black ; orbicular and reniform small, with brown centres and grey-white annuli defined by black, the former round ; an indistinct waved medial line ; postmedial line dentate, defined on outer side by grey-white lunules, bent outwards below costa and strongly incurved below vein 4, some white points beyond it on costa ; subterminal line grey-white, defined on inner side by small dentate blackish marks, angled outwards at vein 7, excurved and somewhat dentate at veins 4, 3 ; a terminal series of small black lunules. Hind wing pale suffused with fuscous brown, the terminal area darker ; cilia whitish, with a brown line through them ; the underside pale suffused with brown, a slight discoidal spot and curved postmedial line, a diffused subterminal band.

Hab. Switzerland (*Gerhard*), 1 ♂. *Exp.* 32 millim.

1413. Polia pumila. (Plate LXXXIV. fig. 4.)

Dianthœcia pumila, Staud. Hor. Soc. Ent. Ross. xiv. p. 378 (1879) ; id. Cat. Lep. pal. p. 164.

Head and thorax grey mixed with brown and black ; tegulæ with black medial line ; abdomen grey mixed with brown. Fore wing whitish, largely suffused and irrorated with brown ; subbasal line double, waved, filled in with whitish, from costa to submedian fold ; antemedial line indistinctly double, filled in with whitish, waved, angled inwards on vein 1 ; claviform short or moderate, defined by black ; orbicular and reniform whitish, with brown centre and defined by black, the former rounded, the latter slightly concave on inner side ; traces of a medial line ; postmedial line double filled in with whitish, minutely dentate, bent outwards below costa and oblique below vein 4, some pale points beyond it on costa ; subterminal line white, defined on inner side by slight dentate black marks below costa and at middle, excurved at vein 7 and at veins 4 and 3 ; a terminal series of small black lunules. Hind wing

whitish suffused with fuscous brown, especially on terminal area, more uniformly in female; the underside whitish irrorated with brown, a fine dark terminal line.

Hab. Asia Minor, Pontus, 1 ♂, 1 ♀, Taurus; Syria, Mardin. *Exp.*, ♂ 26, ♀ 28 millim.

1414. Polia albimacula.

Noctua albimacula, Borkh. Eur. Schmett. iv. p. 149 (1792); Steph. Ill. Brit. Ent., Haust. ii. p. 137, pl. 19. f. 3; Staud. Cat. Lep. pal. p. 162.
Noctua compta, Esp. Schmett. iv. pl. 117 a. f. 7 (1790), nec Schiff.
Noctua concinna, Hübn. Eur. Schmett., Noct. f. 51 (1827); Dup. Lép. Fr. vi. p. 359, pl. 95. f. 3.

Head and thorax reddish olive-brown with white markings; tegulæ with white and black medial line; patagia with white patch edged with black; tarsi ringed with white; abdomen brown. Fore wing reddish olive-brown; a white patch on base of costa traversed by the double, waved, black subbasal line and ending at submedian fold, where there is a black lunule beyond it followed by a curved mark above inner margin; an irregularly waved black antemedial line defined by white on inner side; claviform incompletely defined by black, and with a bidentate white patch beyond it on base of vein 2, extending into the cell on outer side of the orbicular, which is round, white defined by black and with brown centre, and with white mark above it on costa; reniform with brown centre and white annulus defined by black; a waved medial line; postmedial line black defined by white on outer side, dentate, bent outwards below costa and strongly incurved below vein 4, some white points on costa beyond it; subterminal line white, defined by small dentate black marks on inner side and some black beyond it in discal fold, angled outwards at vein 7, excurved and somewhat dentate at middle; a terminal series of small black lunules defined by white; cilia brown intersected with white. Hind wing pale suffused with reddish brown, especially on terminal area; a white spot on vein 2 near termen; cilia white with brown line through them; the underside whitish, the costal area irrorated with brown, the terminal area suffused with brown, a small discoidal lunule and sinuous postmedial line.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Switzerland, Leech Coll.; Hungary, Leech Coll.; Russia, Livonia, Zeller Coll.; Armenia; Asia Minor, Pontus; Persia; W. Siberia, Altai. *Exp.* 28–38 millim.

Larva. Meyr. Brit. Lep. p. 77; Barrett, Lep. Brit. iv. p. 245, pl. 163. f. 3.

Pale brownish ochreous; dorsal line fine, indistinctly pale, traversing a series of blackish spots connected with indistinct V-shaped marks; supra-spiracular line waved, fuscous, indistinct; head brown-streaked. Food-plant: seed-capsules of *Silene nutans*. 7–8.

1415. Polia conspersa.

Noctua nana, Rott. Naturf. ix. p. 132 (1776), nec Hüfn.; Staud. Cat. Lep. pal. p. 162.
Noctua conspersa, Schiff. Wien. Verz. p. 71 (1776); Esp. Schmett. iv. pl. 119. f. 5; Hübn. Eur. Schmett., Noct. f. 52; Dup. Lép. Fr. vi. p. 354, pl. 95. f. 1.
Bombyx annulata, Fabr. Spec. Ins. ii. p. 204 (1781).
Dianthœcia ochrea, Gregson, Ent. Rec. ii. p. 306 (1891).
Dianthœcia dealbata, Staud. Iris, v. p. 365 (1892).
Dianthœcia hethlandica, Staud. Iris, v. p. 366 (1892).

Head and thorax white with black markings; tegulæ and patagia edged with black, the former with black medial line; tarsi ringed with white; abdomen pale brown. Fore wing olive-grey suffused in part with black and with white patches tinged in part with yellow; a basal white patch on costa traversed by the double, waved, subbasal line from costa to submedian fold; a double, waved, antemedial line traversing a white patch on inner margin; claviform defined by black, with a bidentate white patch beyond it on base of vein 2 extending into the cell on outer side of the orbicular, which is round, white defined by black, and with some white marks on costa above it; reniform white defined by black and with olive centre; postmedial line double, lunulate, filled in with white towards costa and inner margin, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, some white points beyond it on costa, and a white patch on inner area; subterminal line white, defined on inner side by some dentate black marks at middle, angled outwards at vein 7 and excurved at middle, the area beyond it more or less suffused with white and with a white apical patch; a terminal series of small black lunules; cilia chequered fuscous and white. Hind wing fuscous brown, the interspaces rather paler towards base; cilia white at tips; the underside greyish thickly irrorated with fuscous, a discoidal spot and curved postmedial and subterminal bands.

Ab. 1. *ochrea*. Fore wing with the markings ochreous instead of white.

Ab. 2. *hethlandica*. Fore wing much darker, often almost uniform fuscous, the cilia without white.—Shetland Is.

Ab. 3. *dealbata*. Fore wing with the white markings reduced, the apical patch absent.—Armenia; W. Turkestan; E. Siberia.

Hab. Britain, Shetland, Orkneys, Hebrides (*McArthur*), England, Ireland, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Hungary, Leech Coll.; Switzerland, Zeller Coll.; Algeria, Bone (*Lewis*), 1 ♂; Armenia; Asia Minor, Pontus, Bithynia; W. Turkestan, Issyk-kul; W. Siberia, Altai; Mongolia, Uliassutai, 1 ♂, Urga; Tibet, Amdo; S.E. Siberia, Dahuria, Ussuri. *Exp.* 36 millim.

Larva. Meyr. Brit. Lep. p. 77; Barrett, Lep. Brit. iv. p. 252, pl. 164.

Pale brownish ochreous; dorsal line pale, traversing a series of dark V-shaped marks; two lateral pale brownish lines; spiracular line whitish; spiracles pink; head pale brownish with four dark streaks. Food-plants: seed-capsules of *Lychnis* and *Silene*. 7-9.

1416. Polia compta.

Noctua compta, Schiff. Wien. Verz. p. 70 (1776); Fabr. Mant. Ins. ii. p. 169 (1787); Esp. Schmett. iv. pl. 119. f. 6; Hübn. Eur. Schmett., Noct. f. 53; Dup. Lép. Fr. vi. p. 356, pl. 95. f. 2; Staud. Cat. Lep. pal. p. 163.
Dianthœcia viscariæ, Guen. Noct. ii. p. 26 (1852).
Dianthœcia armeriæ, Guen. Noct. ii. p. 26 (1852); Mill. Ann. Soc. Cannes, 1878, p. 9, pl. 3. f. 9.
Mamestra humilis, Christ. Iris, vi. p. 92 (1893).

Head and thorax brown mixed with black and white; tegulæ with black medial line; tarsi ringed with white; abdomen grey-brown with whitish segmental lines. Fore wing fuscous black suffused in parts with purplish; a whitish patch on base of costa traversed by the double, waved subbasal line from costa to submedian fold, in which there is often a yellow streak; antemedial line double, waved, filled in with white towards costa and inner margin; claviform defined by black; a white medial band, its outer edge defined by the waved medial line; orbicular and reniform white defined by black, the former round, the latter with brown centre; postmedial line double, dentate and produced to white spots on the veins, filled in with white towards costa and inner margin, bent outwards below costa, and strongly incurved below vein 4, some white points beyond it on costa; subterminal line white, defined on inner side by a series of small dentate black marks often placed on yellow patches, some black beyond it in discal fold, angled outwards at vein 7, excurved and somewhat dentate at veins 4, 3; a terminal series of small black lunules slightly defined by white; cilia intersected with white. Hind wing fuscous brown, rather paler towards base; a small whitish spot on vein 2 near termen; cilia white at tips; the underside whitish, the costal area irrorated with fuscous, the terminal area suffused with fuscous, a small discoidal spot and curved postmedial line.

Ab. 1. *viscariæ*. Fore wing with the medial band suffused with yellow or brown.

Ab. 2. *humilis*. Fore wing dull greyish, the medial white band dirty white, obsolescent and almost reduced to a spot.—Armenia; Taurus; W. Turkestan.

Ab. 3. *armeriæ*. Fore wing dull grey-black, the lines obsolete, the medial white band broad.—S. Russia.

Hab. Britain, Ireland; France, Sand Coll.: Germany, Zeller and Frey Colls.; Hungary, Leech Coll.: Switzerland, Frey Coll.; Sweden; Russia; Armenia; Asia Minor, Pontus, Taurus, Bithynia; Persia; W. Turkestan, Sarawschan; W. Siberia, Altai; E. Turkestan, Thian Shan Mts.: S.E. Siberia, Amurland, 1 ♀; Japan, Oiwake (*Pryer*), 2 ♂, 2 ♀, Hakodate, 1 ♂, Tokio (*Maries*), 1 ♂. *Exp.* 28–36 millim.

Larva. Kirby, Eur. Butt. & Moths, p. 221.

Reddish grey, with a reddish-brown dorsal stripe intersected with white and expanding into segmental spots; a yellowish-grey lateral stripe. Food-plants: seed-capsules of *Silene* and *Dianthus*. 7–9.

1417. Polia guenei. (Plate LXXXIV. fig. 5.)

Dianthœcia gueneei, Staud. Cat. Lep. pal. p. 163 (1901).

Head and thorax black irrorated with white and slightly with ochreous; pectus ochreous, legs ochreous and fuscous, the tarsi banded with black; abdomen ochreous irrorated with fuscous. Fore wing black irrorated with white and some ochreous, especially at base; the medial area yellowish white except at middle of costa and beyond the reniform; subbasal line defined by white on outer side, waved from costa to submedian fold; antemedial line double filled in with whitish, waved; claviform absent; orbicular and reniform moderate, incompletely defined by black, the former round, the latter with irregular outline and ill-defined whitish annulus; a medial line oblique from costa to median nervure, then dentate; postmedial line lunulate, bent outwards below costa and incurved below vein 4, some pale points beyond it on costa; subterminal line ill-defined, whitish tinged with ochreous and with traces of dentate black marks before it at middle, excurved at vein 7 and somewhat dentate at veins 4, 3; a terminal series of small black lunules; cilia fuscous intersected with ochreous. Hind wing white tinged with ochreous, the veins and terminal area fuscous; cilia ochreous white mixed with fuscous; underside white, the costal area irrorated with fuscous, a slight discoidal point, sinuous postmedial line, and diffused subterminal band.

Hab. Asia Minor, Pontus, Bithynia, Taurus; Syria, 1 ♀, Antioch, Mardin; Cyprus. *Exp.* 40 millim.

Genus **PACHETRA**.

Type.

Pachetra, Guen. Ann. Soc Ent. Fr. 1841, p. 241, non descr.; id. Noct. i. p. 177 (1852) ..... *leucophæa*.

Proboscis fully developed; palpi upturned, fringed with hair in front; frons smooth; eyes large, rounded; antennæ of male bipectinate with long branches to near apex; head and thorax clothed with rough hair and hair-like scales, the pro- and metathorax with spreading crests; abdomen with dorsal series of crests. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

1418. Pachetra leucophæa.

Noctua leucophæa, Schiff. Wien. Verz. p. 82 (1766); View. Tab. Verz. v. 2, p. 23 (1790); Hübn. Samml. Eur. Schmett., Noct. f. 80; Dup. Lép. Fr. vi. p. 282, pl. 90. f. 6; Steph. Ill. Brit. Ent., Haust. ii. p. 190; Staud. Cat. Lep. pal. p. 155.
Bombyx fulminea, Fabr. Sp. Ins. ii. p. 205 (1781).
Bombyx vestigialis, Esp. Schmett. iii. pl. 53. ff. 4, 5 (1785).
Noctua ravida, Esp. Schmett. iv. pl. 145. f. 1 (1789).
Hadena bombycina, Ev. Bull. Mosc. 1847, ii. p. 78, pl. 6. ff. 1, 2.
Mamestra incana, Mill. Cat. rais. Suppl. ii. p. 17 (1875).
Pachetra pyrenaica, Oberth. Ét. Ent. viii. p. 50 (1884); id. ix. pl. 3. f. 10.

Head and thorax whitish mixed with red-brown and black;

tegulæ with black medial line; patagia edged with black; tarsi ringed with white; abdomen whitish mixed with brown. Fore wing whitish suffused with pale yellowish and dark brown and irrorated with black, the veins streaked with whitish; subbasal line represented by a striga from costa and double striga from cell; a slight black streak below base of cell; antemedial line double, minutely waved, angled outwards above inner margin; claviform well-developed, defined by and suffused with black, its edges often continued to the basal black streak; orbicular and reniform large, with brown centres and white annuli defined by black, the former round; some black suffusion often present in and below cell; traces of a diffused medial line; postmedial line double, bent outwards

Fig. 27.—*Pachetra leucophæa*, ♂. ½.

below costa, then oblique and acutely dentate on veins 5 to 2, some white points on costa beyond it; subterminal line whitish, defined on inner side by a series of dentate black marks, angled outwards at vein 7 and indented at veins 4, 3 by dentate whitish streaks defining the veins; a terminal series of small black lunules; cilia chequered white and brown. Hind wing whitish tinged with brown, the veins and terminal area suffused with brown; cilia brown at base, white at tips; the underside whitish, the costal and terminal areas irrorated with brown, a discoidal lunule and curved postmedial line.

Ab. 1. *bombycina*. Fore wing with the markings more prominent. —Urals, Centr. Asia.

Ab. 2. *pyrenaica*. Fore wing more or less suffused with fuscous. —Pyrenees, Spain, Asia Minor.

Ab. 3. Hind wing white, the veins only tinged with brown. —Syria.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Switzerland, Zeller and Frey Colls.; N. Italy; S. Sweden; Finland; Russia, Livonia, Urals; Asia Minor, Bithynia, Pontus; Syria, Leech Coll.; W. Turkestan, Tarbagatai Mts., Ala Tau; W. Siberia, Altai; E. Turkestan, Ili. *Exp.* 44–52 millim.

Larva. Meyr. Brit. Lep. p. 85; Barrett, Lep. Brit. iv. p. 147, pl. 153. f. 1. Ochreous or brownish ochreous; dorsal line pale, traversing a series of oblique blackish marks; subdorsal line indistinct, spiracular line pale, edged with blackish marks above. Food-plants: Grasses. 6–4.

Genus **ODONTESTRA**, nov.

Type, *O. vittigera.*

Proboscis fully developed; palpi short, oblique, fringed with hair in front; frons with rounded prominence with small corneous plate below it; eyes large, rounded; antennæ of male ciliated; head and thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; abdomen with dorsal crest on 1st segment only. Fore wing rather short and broad, the termen evenly curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars, 6, 7 from upper angle or shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing without whitish streak below vein 2 ..... *vittigera.*
B. Fore wing with whitish streak below vein 2.
a. Fore wing without whitish fascia on inner margin ..... *albivitta.*
b. Fore wing with whitish fascia on inner margin.
a^1. Fore wing with the subterminal line narrow, whitish.
a^2. Hind wing white, the terminal area suffused with fuscous ..... *simillima.*
b^2. Hind wing uniformly suffused with fuscous ..... *potanini.*
b^1. Fore wing with the subterminal line broader, yellowish ..... *submarginalis.*

1419. Odontestra vittigera.

Mamestra vittigera, Hmpsn. Ann. S. Afr. Mus. ii. p. 266 (1902).

♂. Head and thorax purplish fuscous mixed with grey and red; tarsi with pale rings; abdomen ochreous, the ventral surface dark brown. Fore wing purplish fuscous, the medial area more or less tinged with purplish pink; subbasal line represented by pink striæ from costa and cell, with diffused black on each side of them; antemedial line double, filled in by brown, curved; claviform large,

Fig. 28.—*Odontestra vittigera*, ♂. ½.

filled in with black; orbicular usually obsolete, sometimes a small round ochreous spot; reniform large, ochreous white defined by black and with rufous centre, some blackish suffusion before and beyond it; an ochreous-white fascia on medial part of inner margin; postmedial line double, filled in with ochreous, minutely dentate, bent outwards below costa and oblique below vein 4; subterminal line ochreous, defined by dentate black marks on inner side, angled outwards at vein 7 and dentate at veins 4, 3; an apical ochreous patch; a terminal series of small black lunules; cilia intersected

with ochreous. Hind wing pure white, the costal area tinged with fuscous; the underside with discoidal point and postmedial series of short streaks on the veins.

♀. Hind wing dark fuscous; cilia fuscous at base from apex to vein 2.

Hab. Mashonaland, Salisbury (*Dobbie*), 1 ♀; Zululand, Lower Tugela (*Reynolds*), 4 ♂; Natal, Victoria District (*Gooch*), 1 ♂ type, Northdene, 1 ♀, Durban (*Leigh*), 1 ♀. *Exp.* 30–34 millim.

1420. **Odontestra albivitta**, n. sp. (Plate LXXXIV. fig. 6.)

♂. Head and thorax purplish fuscous, the hairs tipped with grey, the patagia with rufous patches; tarsi with ochreous rings; abdomen ochreous, ventrally fuscous. Fore wing purplish fuscous, subbasal line represented by black striæ on reddish marks from costa and cell; antemedial line indistinct, slightly defined by ochreous on inner side, angled outwards in cell, then incurved; claviform large, filled in with black, a whitish fascia above it, above and below median nervure and vein 2 to near subterminal line; orbicular a small ochreous-white spot or obsolete; reniform with rufous centre and ochreous annulus, slightly angled inwards on median nervure, black patches before and beyond it; postmedial line slightly defined by rufous on outer side, dentate, bent outwards below costa, excurved to vein 4, then incurved, some ochreous points beyond it on costa; subterminal line represented by a series of ochreous spots with dentate black marks before them, angled outwards at vein 7, the area beyond it reddish; cilia pale rufous, with two brown lines through them. Hind wing ochreous white, with diffused fuscous subterminal band; the underside with the costal area irrorated with fuscous, a postmedial series of short streaks on the veins.

Hab. Br. E. Africa, Athi-ya-Mawe (*Betton*), 1 ♂, Kikuyu (*Crawshay*), 1 ♂ type. *Exp.* 32 millim.

1421. **Odontestra simillima.** (Plate LXXXIV. fig. 7.)

Neuria simillima, Moore, P. Z. S. 1881, p. 344; Hmpsn. Moths Ind. ii. p. 201.

Head and thorax purplish fuscous mixed with black; tarsi with pale rings; abdomen brownish ochreous, dorsally tinged with fuscous. Fore wing purplish fuscous mixed with some red-brown; an ochreous-white fascia on inner margin from near base to tornus, with some red-brown above it on medial area: subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, obsolete below vein 1; claviform large, defined by and suffused with black; vein 2 defined by a dentate white streak to postmedial line; orbicular and reniform defined by black, the former somewhat elliptical, the latter angled inwards on median nervure, with whitish annulus and rufous patch on outer side; postmedial line double, dentate, bent outwards below costa, excurved to vein 4, then oblique,

obsolete below vein 1; subterminal line white, slightly waved, angled outwards at vein 7 and inwards in submedian fold, defined on inner side by dentate black marks; a terminal series of small black lunules. Hind wing whitish, the costal and terminal areas tinged with fuscous.

Hab. Punjab, Simla (*Reed*, *Swinhoe*, *Harford*), 1 ♂, 2 ♀ type; Sikhim. *Exp.* 36 millim.

1422. Odontestra potanini.

Mamestra potanini, Alph. Iris, viii. p. 192 (1895); id. Rom. Mém. ix. p. 137, pl. ix. f. 10 (1897).

Head and thorax irrorated with grey; tegulæ with black medial line; patagia edged with black above; tarsi with pale rings; abdomen fuscous brown. Fore wing purple-grey; the costal area suffused with purplish red except towards base; the inner margin with ochreous-white fascia from near base to tornus; subbasal line represented by double striæ from costa and a black patch below the cell crossed by an oblique ochreous striga; antemedial line double, dentate towards costa, usually filled in with ochreous in submedian interspace, obsolete below vein 1; claviform very large, filled in with black; vein 2 defined by an ochreous-white fascia below or on both sides to just beyond postmedial line; orbicular and reniform with ochreous annuli defined by black, the former very small, round, or oblique elliptical, the latter with ochreous centre and bent inwards on median nervure; postmedial line double, dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then oblique, obsolete below vein 1, some pale points beyond it on costa often present; subterminal line ochreous white, defined on inner side by prominent dentate black marks, angled outwards at vein 7 and inwards in submedian fold, some red-brown suffusion beyond it, the apex usually ochreous; a terminal series of small black lunules; cilia grey, with black lines through them. Hind wing fuscous; the cilia pale, with a brown line near base; the underside pale, the costal and terminal areas thickly irrorated with fuscous, a discoidal lunule and curved postmedial line.

Hab. W. China, Wa-ssu-kow, 2 ♂, 1 ♀, Chow-pin-sa, 1 ♂, Omei-shan, 1 ♀; Punjab, Simla (*Harford*), 1 ♂, 1 ♀, Dalhousie, 1 ♂, Dharmsála (*Hocking*), 1 ♀. *Exp.* 44 millim.

1423. Odontestra submarginalis.

Heliophobus submarginalis, Wlk. Char. Undescr. Het. p. 32 (1869).
Neuria incisa, Moore, P. Z. S. 1881, p. 344; Hmpsn. Moths Ind. ii. p. 201.
Neuria auripicta, Butl. Ill. Het. B. M. vii. p. 53, pl. 127. f. 3 (1889).

Head and thorax grey mixed with brownish ochreous and black; tarsi with pale rings; abdomen grey tinged with fuscous. Fore wing purplish grey irrorated and suffused with black, some yellow scaling in base of cell and on medial area below the cell; an

ochreous-white fascia on inner margin from near base to tornus; subbasal line double filled in with white, angled inwards in cell, from costa to vein 1; antemedial line double filled in with whitish, angled outwards below costa and inwards on subcostal nervure and on vein 1; claviform large, filled in with black; vein 2 defined below by a white fascia to just beyond postmedial line; orbicular and reniform with ochreous-white annuli defined by black, the former small, oblique elliptical, the latter dilated below; postmedial line double filled in with whitish, dentate, bent outwards below costa, excurved to vein 4, then oblique, some whitish points beyond it on costa; subterminal line ochreous white shading into yellow on outer side, defined on inner side by prominent dentate black marks, angled outwards at vein 7 and inwards in submedian fold; an apical ochreous patch; a terminal series of small black lunules; cilia with fine pale line at base. Hind wing suffused with fuscous; cilia whitish at tips; the underside pale suffused with fuscous, a discoidal lunule and curved postmedial line.

Hab. Punjab, Kulu, 1 ♂, Dharmsála (*Hocking*), 9 ♂, 5 ♀, type and types *incisa* and *auripicta*. *Exp.* 42–46 millim.

Genus **HADENA**.

	Type.
Hadena, Schrank, Faun. Boica, ii. (2) p. 158 (1802)	*reticulata*.
Neuria, Guen. Noct. i. p. 166 (1852), nec Guèn. 1841, non descr.	*reticulata*.
Dargida, Wlk. ix. 201 (1856)	*graminivora*.
Eupsephopactes, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 137 (1873)	*procincta*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint fringed with hair in front, the 3rd short; frons smooth; eyes large, rounded; antennæ of male ciliated; thorax quadrately clothed with hair and scales, prothorax typically with divided crest; pectus clothed with long hair; tibiæ fringed with long hair; abdomen with dorsal crest on basal segment, clothed with woolly hair at base and with lateral fringes of hair towards extremity. Fore wing rather narrow, the apex produced and the termen obliquely curved, the cilia crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base.

Sect. I. Thorax with divided ridge-like crest.

A. Fore wing with white fascia below median nervure and vein 4.
  a. Fore wing with the ante- and postmedial lines confluent on vein 1.
    a^1. Hind wing pure white ..... *gramina*.
    b^1. Hind wing whitish, the terminal area brown ..... *procincta*.
  b. Fore wing with the ante- and postmedial lines not confluent on vein 1.
    a^1. Fore wing with short white streak above extremity of claviform; orbicular very oblique, narrow ..... *graminivora*.
    b^1. Fore wing without short white streak above extremity of claviform; orbicular oblique, quadrate ..... *meridionalis*.

B. Fore wing with the veins narrowly streaked with white.
  a. Fore wing with the postmedial line strongly excurved from below costa to vein 4, then oblique ..... *dissecta*.
  b. Fore wing with the postmedial line moderately excurved from below costa to vein 4, then incurved.
    a^1. Fore wing with the veins defined by pale streaks on postmedial area..... *reticulata*.
    b^1. Fore wing with the veins not defined by pale streaks on postmedial area ..... *texturata*.
C. Fore wing with the veins not streaked with white, the terminal area whitish ..... *uncifera*.

1424. **Hadena graminea.** (Plate LXXXIV. fig. 8.)

Dargida graminea, Schaus, Trans. Am. Ent. Soc. xxi. p. 231 (1894).

♂. Head and thorax pinkish white; palpi rufous; frons with rufous bar above; tegulæ with three rufous lines; patagia edged with rufous and black above; pectus rufous; abdomen ochreous white, the dorsal crest rufous, the anal tuft ochreous, the ventral surface suffused with rufous. Fore wing yellowish white largely suffused with purplish pink, and with patches of red-brown between the markings except on costal and inner areas; subbasal line represented by an oblique striga from costa slightly defined by black, and a very oblique striga from cell to vein 1 strongly defined by black; antemedial line indistinct on costal area, angled inwards on medial nervure, then white, very oblique to middle of vein 1 where it meets the postmedial line, a white streak below median nervure and vein 4 from it to subterminal line; orbicular and reniform very narrow, with rufous centres and white annuli defined by black, the former very oblique, open above and below, the latter inwardly oblique, pointed above and open below; postmedial line white, bent outwards below costa, oblique to vein 5, then inwardly oblique to join the antemedial line at vein 1, some white points beyond it on costa; an oblique white band from apex, at vein 5 joining the postmedial line; a fine sinuous white subterminal line angled outwards at vein 7 and excurved at middle; termen white, with a fine pink terminal line; cilia whitish, with a strong brown line through them. Hind wing yellowish white.

Hab. Brazil, Castro Paraña, 1 ♂, type † ♂ in Coll. Schaus.
Exp. 34 millim.

1425. **Hadena procincta.** (Plate LXXXIV. fig. 9.)

Eupsephopactes procinctus, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 138, pl. iv. f. 6 (1873); Smith, Cat. Noct. N. Am. p. 170.

Head and thorax whitish mixed with pale purplish red-brown; frons with blackish bars; tegulæ with black and white lines; patagia whitish edged by black and purplish brown; tarsi blackish ringed with white; abdomen brownish ochreous, the anal and lateral tufts with a rufous tinge. Fore wing brown, the marginal areas greyish purple, the inner margin fawn; the veins dark defined by

grey-purple; the median nervure with creamy-white fascia forking between veins 3, 4; the subbasal line represented by a very oblique whitish striga from costa, defined on each side by black and by an inwardly oblique striga from median nervure with some black on each side of it; the antemedial line double, black filled in with creamy white, angled outwards below costa, then strongly inwards on median nervure and very strongly outwards to postmedial line on vein 1, its inner side defined below the cell by purplish grey, at median nervure angled back below the subbasal striga; claviform defined by black; orbicular and reniform very narrow and oblique, with pale brown centres defined by dark brown and creamy-white annuli defined by black, the former confluent with the antemedial line above and open above and below; postmedial line creamy white, partially defined on inner side by black, angled inwards below costa, then very oblique to vein 4, where it is joined by a creamy-white fascia with slight dark line on it from apex, then very oblique to vein 1 near middle, then angled outwards to inner margin, some pale points beyond it on costa; subterminal line represented by a series of creamy-white lunules with strong dentate black marks before them and some black on their outer edges; a fine black terminal line; cilia pale brown, with two black lines through them. Hind wing whitish, the veins brown; the marginal areas broadly brown; cilia whitish, with brown line near base; the underside with black discoidal point.

Hab. Canada, Calgary (*Wolley-Dod*), 2 ♀, Vancouver I., 1 ♂; U.S.A., Oregon, Portland, Colorado, California (*Behr*, *Walsingham*), 3 ♂, 1 ♀; Costa Rica, Irazu (*Rogers*), 1 ♂, Candalaria Mts. (*Underwood*), 1 ♀, Godman-Salvin Coll. *Exp.* 48–54 millim.

Larva. Head rounded, pale brown, reticulate with dark brown, vertical lines obsolete. Body thickly shaded in brown, leaving little pale strigæ only. Dorsal, subdorsal, lateral, and substigmatal lines broad, straight, pale. Dorsal space dark, the dorsal line reddish strigose, an elongate, black segmentary shade edging subdorsal line above. Subdorsal line yellowish white, strigose; lateral line fainter; substigmatal line broadly red-filled. Spiracles white, in patches of dark shading. Shields concolorous, weakly chitinized, the anal plate pale, but cut by the subdorsal line. Feet pale.—H. G. D.

1426. Hadena graminivora. (Plate LXXXIV. fig. 10.)

Dargida grammivora, Wlk. ix. 202 (1856); Druce, Biol. Centr.-Am., Het. i. p. 270.

Head and thorax purplish grey mixed with ochreous and red-brown; tegulæ with black medial line; patagia edged with black; abdomen brownish ochreous, the anal tuft and ventral surface rufous. Fore wing black, the marginal areas suffused with purplish grey, the inner margin ochreous brown, the veins black defined by purplish grey, the median nervure streaked with ochreous white forking between veins 4 and 3; the subbasal line ochreous white,

defined on each side by black, angled at cell and ending at submedian fold; the antemedial line double, black filled in with ochreous white, angled outwards below costa, inwards on median nervure, strongly outwards just below vein 1 and retracted above inner margin; claviform defined by black and with an oblique ochreous striga above its extremity; orbicular and reniform very oblique, narrow, brown with ochreous annuli defined by black, the former open above and confluent with the antemedial line, the latter open above and below; postmedial line double, black filled in with ochreous, slightly bent outwards below costa, then oblique to vein 4, where it is joined by an oblique ochreous band from apex, then very oblique to inner margin, some pale points beyond it on costa; subterminal line represented by a series of ochreous points on dentate black marks; cilia brownish with two black lines through them, an ochreous line at base and intersected with ochreous. Hind wing white; the veins brown; the costal and inner areas suffused with brown; the terminal area broadly brown with rather diffused inner edge; the underside with the costal and terminal areas irrorated with brown, the former tinged with reddish, a dark discoidal lunule and sinuous postmedial line.

Hab. Mexico, Milpas (*Forrer*), 2 ♀, Godman-Salvin Coll.; Venezuela, 4 ♂, 3 ♀, type. *Exp.* 46 millim.

1427. **Hadena meridionalis**, n. sp. (Plate LXXXIV. fig. 11.)

♀. Head and thorax fuscous mixed with white; tegulæ with black medial line; patagia edged with black above; abdomen brownish grey. Fore wing black-brown, the marginal areas suffused with purplish grey, the inner margin brownish ochreous; the median nervure streaked with white extending along vein 4 to termen; subbasal line white defined on each side by black, angled at cell and ending at vein 1; the antemedial line double, black filled in with white, angled outwards below costa, inwards on median nervure, then strongly outwards just below vein 1 and retracted above inner margin; claviform defined by black; orbicular and reniform with brown centres and whitish annuli defined by black, the former oblique quadrate, open above and below, the latter oblique elliptical; the postmedial line double, black filled in with white, slightly bent outwards below costa, oblique to vein 4 where it is joined by an oblique white band from apex, then oblique to inner margin; subterminal line represented by a series of small ochreous lunules on dentate black marks; a terminal series of black lunules. Hind wing white; the veins brown; the costal and inner areas suffused with brown; a broad terminal brown band with diffused inner edge; the underside with black discoidal point.

Hab. Brazil, Rio Janeiro, 1 ♀ type. *Exp.* 42 millim.

1428. Hadena dissecta.

Heliophobus dissectus, Wlk. xxxii. 656 (1865); Moore, Lep. Ceyl. iii. p. 22, pl. 146. f. 7; Hmpsn. Moths Ind. ii. p. 209.
Mamestra crucifer, Feld. Reis. Nov. pl. 109. f. 30 (1874).

Head and thorax red-brown irrorated with black; tegulæ with black medial line defined by whitish above and with whitish tips; abdomen fuscous brown, the anal tuft ochreous. Fore wing golden brown suffused and irrorated with black, the veins streaked with ochreous; subbasal line black, defined by ochreous on outer side, excurved from costa to base at vein 1, an oblique ochreous striga beyond it across the cell; antemedial line black on a narrow ochreous band, angled outwards below costa, then incurved to above inner margin, where it is angled; claviform obscurely defined by black; orbicular and reniform with ochreous annuli defined by black, the former oblique elliptical, open above, the latter oblique oblong; postmedial line black on a narrow ochreous band, bent outwards below costa, then oblique to vein 6, where it is joined by an oblique ochreous band from apex, then very oblique to above inner margin, where it is angled inwards; subterminal line ochreous, interrupted at the veins, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia with ochreous line at base. Hind wing fuscous brown, the interspaces of basal area whitish, especially in male; cilia ochreous with a brown line through them; the underside paler, the costal and terminal areas irrorated with brown, the former tinged with rufous, a dark discoidal point and waved postmedial line.

Hab. Japan, Nikko (*Leech*), 1 ♂; W. China, Chia-kou-ho (*Pratt*), 1 ♀; Sikhim (*Lidderdale, Möller*), 1 ♂, 3 ♀, type; Ceylon, 1 ♂; Philippines. *Exp.* 50–52 millim.

1429. Hadena reticulata.

Noctua reticulata, Vill. Linn. Ent. ii. p. 254 (1789); Staud. Cat. Lep. pal. p. 159.
Noctua calcatrippa, View. Schmett. p. 71 (1790).
Noctua saponariæ, Esp. Schmett. iv. pl. 198. ff. 3, 4 (1790); Dup. Lép. Fr. vi. p. 272, pl. 90. f. 2; Steph. Ill. Brit. Ent., Haust. ii. p. 188.
Noctua marginosa, Haw. Lep. Brit. p. 195 (1803).
Noctua typica, Hübn. Eur. Schmett., Noct. f. 58 (1827).
Mamestra unicolor, Alph. Rom. Mém. v. p. 147 (1889).

Head and thorax reddish brown mixed with grey and black; tarsi blackish with pale bands; abdomen ochreous thickly irrorated with dark brown. Fore wing dark brown, suffused with violaceous before the antemedial line, beyond the claviform and on postmedial area; the veins streaked with white except on postmedial area, where they are black; the subbasal line represented by double oblique black striæ filled in with white from costa and cell, a very oblique white striga across the cell just beyond it; the antemedial line double, black filled in with white, angled outwards below costa and above inner margin, incurved between those points;

claviform large, defined by black and with pale streak at centre; orbicular and reniform with white annuli defined by black, the former oblique elliptical, open above, the latter narrow and with white lunule at centre; a fine black medial line oblique from costa to vein 2, then dentate; postmedial line double, black filled in with white, minutely waved, bent outwards below costa, excurved to vein 4, then incurved and angled inwards above inner margin, some white points beyond it on costa; subterminal line ochreous white, angled outwards at vein 7 and dentate at veins 4 and 3, with a

Fig. 29.—*Hadena reticulata*, ♂. ½.

series of dentate black marks on its inner side; a terminal series of small black lunules; cilia with fine pale line at base and intersected with white. Hind wing ochreous white suffused with brown, the veins and terminal area brown; cilia ochreous white with a fine brown line at base; the underside with the costal and terminal areas irrorated with brown, a dark discoidal lunule and indistinct curved postmedial line.

Ab. 1. *unicolor*. Fore wing without violaceous tinge.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Switzerland; Italy, North and Central; Austria; Hungary; Russia, Livonia, Zeller Coll.; Armenia; W. Siberia, Altai, 1 ♂, 1 ♀; W. Turkestan, Ferghana, Sarawschan, Issyk-kul; E. Turkestan, Thian Shán; Mongolia, Uliassutai, Urga; Kashmir, Nubra (*McArthur*), 1 ♀, Goorais Valley (*Leech*), 1 ♂. *Exp.* 40–44 millim.

Larva. Meyr. Brit. Lep. p. 81; Barrett, Lep. Brit. iv. p. 153, pl. 153. f. 2.

Pale greenish ochreous or pinkish ochreous with darker irroration; dorsal, subdorsal, lateral, and spiracular lines faintly paler; head pale brownish. Food-plants: *Silene*, *Rumex*, *Primula*, etc. 8–4.

1430. Hadena texturata.

Mamestra texturata, Alph. Hor. Soc. Ent. Ross. xxvi. p. 446 (1892); id. Rom. Mém. ix. p. 14, pl. 3. f. 2; Staud. Cat. Lep. pal. p. 159.

Head and thorax deep red-brown mixed with some grey; tegulæ and patagia edged with grey, dorsal crests tipped with grey; tarsi black with pale rings; abdomen brown mixed with greyish. Fore wing deep purplish red-brown slightly suffused with fuscous, the veins white to just beyond postmedial line; subbasal line double,

black filled in with white and ending at vein 1; antemedial line double filled in with white, angled outwards below costa and bent inwards to inner margin; claviform large, defined by black; orbicular and reniform with brown centres and pure white annuli defined by black, the former irregularly oblique elliptical, the latter constricted at middle and with its lower edge excised; an indistinct medial line angled on median nervure; postmedial line double filled in with white, bent outwards below costa, excurved to vein 4, then oblique and slightly sinuous, some white points beyond it on costa; subterminal line white, defined on inner side by diffused dentate black marks, slightly angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of black lunules; cilia brown with blackish line at base. Hind wing brown, pale at base; cilia white at tips; the underside pale irrorated with brown, a discoidal lunule and curved postmedial line.

Hab. Tibet, Kuku-noor, Amdo, 1 ♂, 1 ♀. *Exp.* 42 millim.

1431. Hadena uncifera. (Plate LXXXIV. fig. 12.)

Prodenia uncifera, Mssn. Stübel's Reise, p. 140, pl. vi. f. 11 (1890).

Head and thorax mixed grey, ochreous, rufous, and black; tarsi blackish with ochreous rings; abdomen fuscous, suffused with purplish red especially towards extremity. Fore wing dark purplish grey largely suffused with fuscous, the terminal area pale reddish-grey, the medial area suffused with red-brown except towards costa and inner margin; a double, waved, black subbasal line from costa to submedian fold; antemedial line double, black filled in with grey, angled outwards below costa, oblique to vein 1, then excurved and retracted to inner margin; claviform broad, black defined by a prominent dentate yellowish-white mark; orbicular and reniform rufous with yellowish annuli defined by black, the former oblique elliptical, open above, the latter angled inwards on median nervure; some rufous and grey streaks on the veins beyond lower angle of cell; postmedial line double, black filled in with grey, bent outwards below costa, excurved and lunulate to vein 4, then oblique, some yellowish points beyond it on costa; subterminal line formed of yellowish points, defined on inner side by dentate black marks and slightly defined on outer side by black before the pale terminal area, somewhat excurved from below costa to below vein 3 and bent outwards to tornus; a series of blackish points just before termen; cilia grey with a brown line at base. Hind wing whitish, the veins and marginal areas suffused with brown; cilia white with a brown line through them; the underside with the marginal areas irrorated with fuscous and the costal area suffused with brown, a short black streak in cell and black discoidal spot, a sinuous postmedial line.

Hab. Colombia, 1 ♀, Chiles; Ecuador, Pichincha, Mojanda. *Exp.* 40 millim.

Sect. II. Thorax with spreading crest.

A. Fore wing with the basal area blackish ..... *bulgeri.*
B. Fore wing with the basal area not blackish ..... *ruptilinea.*

1432. Hadena bulgeri.

Mamestra bulgeri, Feld. Reis. Nov. pl. 110. f. 18 (1874).

Head and thorax purplish fuscous, slightly mixed with brown and grey; tegulæ with slight dark medial line; tarsi with pale rings; abdomen white more or less tinged with brownish ochreous, the anal tuft brown. Fore wing brown and ochreous, the basal and postmedial areas almost entirely suffused with leaden fuscous, the veins of medial area streaked with ochreous; subbasal line indistinct, waved from costa to submedian fold; antemedial line double, waved; claviform small, fuscous defined by black; orbicular and reniform small, with brown centres and whitish annuli defined by black, the former elliptical, nearly erect, the latter with the discocellulars whitish and more or less angled inwards on median nervure, the cell before and between the stigmata and the area

Fig. 30.—*Hadena bulgeri*, ♂. ½.

beyond the reniform darker; a waved medial line; postmedial line double, minutely waved, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line whitish, defined on inner side by a series of rather large brown and black dentate marks, angled outwards on vein 7 and dentate at veins 4, 3; a terminal series of black lunules; cilia with fine ochreous lines at base and middle. Hind wing pure white, with brown terminal line from apex to vein 2, in female the terminal half suffused with fuscous; the underside with the costal area irrorated with brown, a dark discoidal lunule and postmedial series of short streaks on the veins.

Hab. Br. E. Africa, Athi-ya-Mawe (*Betton*), 1 ♀, Eb Urru (*Betton*), 1 ♂; Natal, Estcourt (*Hutchinson*), 3 ♂, 2 ♀; Cape Colony, Transkei (*Miss F. Barrett*), 7 ♂, 1 ♀. *Exp.* 32–40 millim.

1433. Hadena ruptilinea. (Plate LXXXIV. fig. 13.)

Dianthœcia ruptilinea, Wlk. xi. 507 (1857).

Head and thorax grey, reddish brown, and black mixed; tarsi banded with black; abdomen pale brown. Fore wing pale red-brown irrorated with black; the veins streaked with white; the costal and inner areas suffused with white; subbasal line black

from costa to submedian fold ; antemedial line black, bent outwards at median nervure, then waved and with a blackish spot before it above vein 1 ; claviform defined by black ; orbicular and reniform with blackish centres and white annuli, both rather triangular, the latter with dark shade from it to postmedial line, which is defined by pale brown on outer side, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved ; subterminal line white, defined by a fuscous patch before it at costa and the area beyond it fuscous, arising from apex and dentate at veins 4, 3 ; a terminal series of black lunules defined by white ; cilia purplish grey, with black line through them and intersected by white. Hind wing white with a slight ochreous tinge ; a terminal series of black striæ, in female the terminal area tinged with brown ; the underside with the costal area irrorated with black, a black discoidal lunule and postmedial series of short streaks on the veins.

Hab. Natal, Durban (*Gueinzius, Leigh*), 2 ♂, 1 ♀ type. *Exp.* 36–38 millim.

Genus **THOLERA**.

	Type.
Tholera, Hübn. Verz. p. 214 (1827)	*cespitis.*
Neuronia, Hübn. Verz. p. 215 (1837), nec Leach, Neur. 1815	*popularis.*
Charæas, Steph. Ill. Brit. Ent., Haust. ii. p. 108 (1829)	*cespitis.*
Epineuronia, Staud. Cat. Lep. pal. p. 155 (1901)	*popularis.*

Proboscis weak, non-functional ; palpi obliquely upturned, the 2nd joint fringed with long hair, the 3rd moderate, porrect ; frons smooth, not prominent ; eyes not ciliated ; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests ; tibiæ fringed with rather long hair ; abdomen clothed with rough hair at base and with dorsal crests on 1st segment. Fore wing with veins 3 and 5 from near angle of cell ; 6 from upper angle ; 9 from 10 anastomosing with 8 to form the areole ; 11 from cell. Hind wing with veins 3, 4 from angle of cell ; 5 obsolescent from just below middle of disco-cellulars ; 6, 7 from upper angle ; 8 anastomosing with the cell near base.

Sect. I. (*Neuronia*). Antennæ of male bipectinate with long branches to apex.

A. Fore wing with the ground-colour brown ..... *popularis.*
B. Fore wing with the ground-colour blue-grey ..... *americana.*

1434. Tholera popularis.

Bombyx popularis, Fabr. Syst. Ent. p. 577 (1775) ; Dup. Lép. Fr. vi. p. 279 ; Steph. Ill. Brit. Ent., Haust. ii. p. 189 ; Staud. Cat. Lep. pal. p. 155.

Noctua graminis, Schiff. Wien. Verz. p. 82 (1776) ; Hübn. Samml. Eur. Schmett., Noct. f. 59.

Bombyx lolii, Esp. Schmett. iii. pl. 48. ff. 1–5 (1785) ; Dup. Lép. Fr. vi. pl. 90. f. 5.

Epineuronia hilaris, Staud. Cat. Lep. pal. p. 155 (1901).

Head and thorax clothed with red-brown and white scales and hair ; patagia with some black scales at edges ; abdomen ochreous white tinged with red-brown and fuscous. Fore wing brownish grey slightly irrorated with black, the veins streaked with white ; the subbasal line represented by double black striæ from costa and cell ; the antemedial line double, excurved below costa and strongly

angled outwards above inner margin; claviform large, defined by black and with white streak in centre; orbicular and reniform with red-brown centre and ochreous annuli defined by black, the former rather small round, the latter, angled inwards on median nervure and with white discocellular line; postmedial line double, minutely waved, bent outwards below costa, excurved to vein 4,

Fig. 31.—*Tholera popularis*, ♂. ½.

then incurved; subterminal line represented by a series of pale lunules with dentate black marks on their inner side, slightly angled outwards at vein 7 and excurved at middle; a fine waved terminal black line; cilia ochreous, with brown line through them and brown at tips. Hind wing ochreous white tinged with brown, the terminal area suffused with fuscous; the underside with the costal area irrorated with fuscous, a black discoidal point and sinuous postmedial line.

Ab. 1. *hilaris*. Paler; hind wing of male almost entirely white. —S.E. Russia, Armenia, Asia Minor.

Hab. Britain, Leech Coll.; France, Leech Coll.; Germany, Zeller and Frey Colls.; N. and C. Italy; Norway, Zeller Coll.; Russia, Livonia, Zeller Coll., St. Petersburg, Zeller Coll., Sarepta, Zeller Coll.; Armenia; Asia Minor, Pontus; Siberia. *Exp.* 38–50 millim.

Larva. Meyr. Brit. Lep. p. 76; Barrett, Lep. Brit. iv. p. 135, pl. 152. f. 1.

Bronze-brown; dorsal, subdorsal, lateral, and subspiracular lines pale ochreous edged with blackish; head brownish marked with black. Food-plant: Grasses. 4–6.

1435. Tholera americana. (Plate LXXXIV. fig. 14.)

Neuronia americana, Smith, Trans. Am. Ent. Soc. xxi. p. 59, pl. iii. f. 3 (1894).

♂. Head and thorax white mixed with ochreous brown; tegulæ pale at base and tips; patagia with blackish line near upper edge; tarsi with white rings; abdomen ochreous white. Fore wing ochreous suffused with grey and irrorated with black; the veins prominently streaked with white except on terminal area, where they are blackish defined by white; subbasal line indistinct, represented by double, oblique dark striæ from costa and median nervure filled in with whitish; antemedial line indistinct, excurved in interspaces and angled inwards in cell; claviform elongate,

defined by blackish; orbicular and reniform large, rather indistinctly defined by blackish, the former round with darkish centre; postmedial line very indistinct, bent outwards below costa, excurved to vein 4, then incurved; subterminal line white, with series of dentate fuscous marks on inner side, angled outwards at vein 7 and excurved at middle; a dark terminal line; cilia intersected with white. Hind wing white, the veins and terminal area suffused with fuscous; cilia pure white; the underside with the costal and terminal areas irrorated with brown, a brown discoidal lunule and curved postmedial line.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 1 ♂; U.S.A. Montana, Boulder, Wyoming, Yellowstone Park. *Exp.* 34 millim.

Sect. II. (*Tholera*). Antennæ of male with very short branches, the apex serrate.

1436. Tholera cespitis.

Noctua cespitis, Schiff. Wien. Verz. p. 82 (1776); Hübn. Samml. Eur. Schmett., Noct. f. 428; Dup. Lép. Fr. vii. p. 26, pl. 102. f. 1; Steph. Ill. Brit. Ent., Haust. ii. p. 109; Schultz, Berl. ent. Zeit. 1901, p. 15 (ab. 2); Staud. Cat. Lep. pal. p. 155.
Noctua hordei, Schrank, Faun. Boica, ii. 1, p. 351 (1802).
Agrotis autumnalis, Curt. Brit. Ent. p. 165 (1825).
Charæas confinis, Steph. Ill. Brit. Ent., Haust. ii. p. 109 (1827).
Apamea chloris, Mill. Ann. Soc. Linn. Lyon, 1883, p. 172, pl. 4. ff. 1, 2.
Neuronia ferruginea, Höfm. Soc. Ent. ii. p. 121 (1887).
Neuronia decolor, Sohn, Soc. Ent. xi. p. 115 (1896).

Head and thorax black-brown with some red-brown scales; abdomen brown with a greyish tinge. Fore wing reddish brown

Fig. 32.—*Tholera cespitis*, ♂. ½.

suffused with black and irrorated with a few ochreous scales; subbasal line waved, black, defined by pale rufous on outer side, from costa to submedian fold; antemedial line black, defined by pale rufous on inner side, slightly angled outwards below costa and cell and above inner margin; claviform rather small, defined by black; orbicular and reniform with brown centres and ochreous annuli defined by black, the former round, the latter slightly angled inwards on median nervure; postmedial line black, defined by pale rufous on outer side, dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line ochreous

white, waved, and dentate at veins 7, 4, 3, defined on inner side by a series of dentate black marks; a terminal series of small black lunules; cilia with ochreous line at base. Hind wing ochreous white, the terminal area suffused with brown, more strongly in female; the underside with the costa irrorated with brown, a slight discoidal point and sinuous postmedial line.

Ab. 1. *ferruginea*. Much paler.—Tyrol, Carinthia.

Ab. 2. Right hind wing with the colour and markings of fore wing except on costal area.

Hab. Britain, Leech Coll.; France; Germany, Zeller and Frey Colls.; Switzerland, Frey Coll.; N. and C. Italy; Austria, Hungary, Leech Coll., Dalmatia; Scandinavia; Russia, Livonia, Zeller Coll.; W. Siberia, Altai. *Exp.* 38–40 milim.

Larva. Meyr. Brit. Lep. p. 81; Barrett, Lep. Brit. iv. p. 139, pl. 152. f. 2.

Bronzy olive-brown; dorsal, subdorsal, and spiracular lines whitish with dark edges; lateral line hardly paler, with dark edges; head brownish. Food-plant: Grasses. 4–6.

Genus **ODONTELIA**, nov.

Type, *O. margiana*.

Proboscis absent in male, rather slender in female; palpi oblique, fringed with long hair in front; frons with rounded prominence, with corneous plate below it; eyes large, rounded; antennæ of male bipectinate, with rather long stiff branches to apex; head and thorax clothed with scales and hair and without distinct crests; abdomen with dorsal crest at base and lateral fringes of hair. Fore wing rather long and narrow; veins 3 and 5 from the angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with cell near base only.

1437. Odontelia margiana.

Thargelia margiana, Püng. Iris, xiv. p. 182, pl. ii. f. 14 (1904).

♂. Head, thorax, and abdomen grey-white mixed with fuscous. Fore wing grey-white, slightly tinged with ochreous in places and

Fig. 33.—*Odontelia margiana*, ♂. ½.

thickly irrorated with black; subbasal line represented by very ill-defined double striæ from costa and cell; hardly a trace of the antemedial line; claviform elongate, defined by black; orbicular

and reniform whitish defined by black, the former very narrow and elongate, the latter with some fuscous in upper part, angled inwards on median nervure and its lower extremity produced ; postmedial line represented by a striga from costa ; traces of a dentate subterminal line, angled outwards at vein 7 and excurved at middle ; the veins of terminal area with dark streaks ; cilia chequered brown and white. Hind wing white, the veins and terminal half streaked with fuscous ; cilia white ; the underside white irrorated with fuscous, a slight discoidal lunule and postmedial series of short streaks on the veins.

♀. Fore wing more ochreous, more or less developed black streaks before and beyond the claviform; the antemedial line sometimes more developed on inner area and strongly angled inwards on vein 1 ; orbicular confluent or nearly confluent with reniform, which is bidentate at lower extremity ; subterminal line more distinct, dentate, with some black streaks beyond it in the interspaces.

Hab. W. Turkestan, Merv, type † in Coll. Pungeler, Tedschen oasis (*Hauser*), 2 ♀. *Exp.* 48 millim.

Genus THARGELIA.

	Type.
Thargelia, Püng. Iris, xii. p. 104 (1899)	*distincta.*

Proboscis aborted, small ; palpi obliquely porrect, fringed with hair below ; frons with rounded prominence ; with triangular corneous plate below it ; eyes large, rounded ; antennæ of male minutely serrate and fasciculate ; thorax clothed chiefly with scales ; the pro- and metathorax with spreading crests ; fore tibiæ with small claw at extremity ; abdomen with dorsal crest at base only. Fore wing with veins 3 and 5 from near angle of cell ; 6 from upper angle ; 9 from 10 anastomosing with 8 to form the areole ; 11 from cell. Hind wing with veins 3, 4 from angle of cell ; 5 obsolescent from below angle of discocellulars ; 6, 7 from upper angle ; 8 anastomosing with the cell near base only.

A. Fore wing with the stigmata large and prominently defined ... *distincta.*
B. Fore wing with the stigmata small and rather indistinctly defined ... *fissilis.*

1438. Thargelia distincta.

Scotochrosta distincta, Christ. Rom. Mém. i. p. 124, pl. 8. f. 3 (1884) ; Staud. Cat. Lep. pal. p. 161.

♂. Head and thorax grey-white mixed with brown and black ; palpi blackish at sides except at base ; tegulæ with black medial line ; abdomen brownish grey, the dorsal crest and anal tuft with some black. Fore wing grey-white irrorated with brown ; subbasal line represented by double oblique black striæ from costa ; an irregular black streak below base of cell to the claviform which is elongate and defined by black ; orbicular and reniform defined by black, the former elongate elliptical, the latter open above, its lower part produced to two points on outer side and one on inner ;

postmedial line very highly and irregularly dentate, interrupted by the reniform; subterminal line represented by a series of dentate black and white marks angled outwards at veins 7, 4, 3; a terminal series of small black lunules; cilia chequered brown and white. Hind wing white, the veins brownish, the terminal area

Fig. 34.—*Tharycha distincta*, ♂. ½.

irrorated with brown, a brown terminal line; the underside white, the costal and terminal areas irrorated with brown, a discoidal spot and postmedial series of short streaks on the veins.

Hab. W. Turkestan, Turcomania; E. Turkestan, Kungess, 1 ♂. *Exp.* 46 millim.

1439. Thargelia fissilis.

Scotochrosta fissilis, Christ. Rom. Mém. i. p. 125 (1884); Alph. Rom. Mém. ix. p. 217, pl. 8. f. 9; Staud. Cat. Lep. pal. p. 161.

♂. Head and thorax grey mixed with fuscous; tarsi with dark rings. Fore wing grey thickly irrorated with fuscous; subbasal line absent; antemedial line only traceable near inner margin; claviform small defined by black, on inner side produced as a narrow streak to vein 1 near base; orbicular and reniform small, indistinctly defined by black, the former elongate elliptical, the latter with its lower part produced to points on veins 4, 3; postmedial line represented by double striæ on costa, then by short streaks on the veins and a striga on inner margin, excurved from costa to vein 4, then oblique; the veins of terminal area streaked with black, the postmedial line being represented by indistinct dentate whitish marks defining the veins. Hind wing white; a discoidal spot and terminal series of striæ; the underside with postmedial series of short dark streaks on the veins.

Hab. W. Turkestan, Transcaspia, 5 ♂, Turcomania; E. Turkestan, Kungess, 1 ♂. *Exp.* 38 millim.

Genus **HYPOBARATHRA**, nov.

Type, *H. icterias.*

Proboscis fully developed; palpi obliquely upturned, fringed with hair in front; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair and scales, the pro- and metathorax with spreading crests; fore tibiæ with long curved claw on inner side; abdomen with dorsal crest at base only. Fore wing with veins 3 and 5 from near angle

of cell; 6 rom upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below angle of discocellulars; 6, 7 from upper angle or shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with the ground-colour yellow..... *icterias.*
B. Fore wing with the ground-colour ochreous or rufous ..... *repetita.*

1440. Hypobarathra icterias.

Xylina icterias, Ev. Bull. Mosc. 1843, iii. p. 548; Herr.-Schäff. Eur. Schmett., Noct. f. 626; Staud. Cat. Lep. pal. p. 174.

♂. Head and thorax fulvous with a few dark scales; legs tinged with fuscous; abdomen fulvous yellow irrorated with dark scales below. Fore wing yellow, suffused with fulvous and irrorated with a few dark scales; the costal edge dark; subbasal line very indistinct; antemedial line oblique, waved; claviform defined by fulvous and black; orbicular and reniform defined by fuscous, the former yellow, the latter white with fuscous centre; a fuscous medial line angled at lower angle of cell; postmedial line

Fig. 35.—*Hypobarathra icterias*, ♂. ½.

obsolescent, represented by short dark streaks on the veins, bent outwards below costa, excurved to vein 4, then oblique; some yellow points on costa towards apex; subterminal line only defined by the area beyond it being suffused with fuscous, angled outwards at vein 7 and excurved at middle; a terminal series of small blackish lunules; cilia with black points at tips. Hind wing yellow, the veins beyond middle with some dark scales: the terminal area below apex slightly darker; the underside with slight discoidal point and curved postmedial line.

♀. Fore wing paler, with the markings less distinct.

Hab. Russia, Urals; Amurland, 1 ♂, 1 ♀, Ussuri. *Exp.* 38–42 millim.

1441. Hypobarathra repetita.

Xylophasia repetita, Butl. Ill. Het. B. M. vii. p. 52, pl. 127. ff. 1, 2 (1899); Hmpsn. Moths Ind. ii. p. 202.

Head and thorax rufous tinged with fuscous; tarsi with pale rings; abdomen rufous with a yellowish tinge. Fore wing greyish, more or less completely suffused with rufous and irrorated and

striated with brown, the veins slightly streaked with blackish; subbasal line indistinct, slightly defined by greyish, waved, from costa to submedian fold; antemedial line very indistinct, oblique from costa to submedian fold, then angled inwards on vein 1; claviform very indistinctly defined; orbicular and reniform with fuscous centres and grey annuli defined by rufous, the former rounded; postmedial line dentate and produced to short streaks on the veins, bent outwards below costa and strongly incurved below vein 4, some pale points beyond it on costa; subterminal line pale, defined on inner side by somewhat dentate rufous marks, angled outwards at vein 7 and somewhat dentate at veins 4, 3, the area beyond it suffused with rather darker rufous except at apex; a terminal series of slight points. Hind wing fuscous with a rufous tinge, the basal area slightly paler; the underside whitish irrorated with rufous and brown, a dark discoidal lunule and indistinct postmedial line with short dark streaks at the veins.

Ab. 1. Brighter and more uniform ferruginous. Yatung.

Hab. Punjab, Dharmsála (*Hocking*), 2 ♂, 3 ♀, type; Sikhim Tibet, Chumbi Valley, Yatung (*Hobson*), 2 ♀. *Exp.* 42–50 millim.

Genus **ONYCHESTRA**, nov.

Type, *O. siccanorum*.

Proboscis fully developed; palpi obliquely porrect, the 1st and 2nd joints fringed with hair below; frons with rounded prominence, with curved corneous process below it from middle of frons, a corneous plate below the frons laterally produced into wings; eyes large, rounded; antennæ of male minutely serrate and fasciculate; head and thorax clothed with rough hair and scales and with ill-defined crests on pro- and metathorax; fore legs with the tarsal joints very short and broad, the spines on the first three joints developed into short thick claws, the ungues very large; abdomen with dorsal crest on basal segment and lateral fringes of hair. Fore wing rather narrow; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 9 anastomosing with the cell near base only.

1442. Onychestra siccanorum.

Mamestra siccanorum, Staud. Berl. ent. Zeit. 1870, p. 114; Mill. Icones, pl. 152. f. 8; Staud. Cat. Lep. pal. p. 160.

♂. Head and thorax ochreous brown mixed with white; abdomen ochreous white. Fore wing white, largely suffused and irrorated with ochreous brown; an indistinct whitish subbasal line from costa to submedian fold with some fuscous on each side of it; antemedial line rather indistinct, double, filled in with whitish, slightly angled outwards below costa, oblique to vein 1 where it is angled inwards, then outwards above inner margin; claviform minute or short and broad, defined by black, a whitish patch beyond it; orbicular and reniform with small brown centres and broad white annuli slightly defined by black, the former rather quadrate or oblique elliptical, the latter slightly angled inwards on

median nervure; traces of a waved medial line; postmedial line double filled in with white, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved; veins 3, 4, 6, 7 with

Fig. 36.—*Onychestra siccanorum*, ♂. ½.

dark streaks usually defined by white but not indenting the white subterminal line, which is angled outwards at vein 7 and incurved at submedian fold, with a series of small dentate dark marks before it at middle; a terminal series of small dark lunules; cilia chequered brown and white. Hind wing white with an ochreous tinge, the veins towards termen with slight dark streaks, a fine terminal line; the underside with the costal and terminal areas irrorated with brown, a discoidal spot and curved postmedial line.

Hab. S. Russia, Sarepta (*Christoph*), 3 ♂; W. Turkestan, Issyk-kul, 2 ♂. *Exp.* 30 millim.

Genus **PRONOTESTRA**, nov.

Type, *P. silenides*.

Proboscis fully developed; palpi upturned, fringed with hair; frons with truncate conical prominence with vertical ridge at middle and corneous plate below it, produced to a point in front; eyes large, rounded; antennæ of male serrate and fasciculated; thorax clothed with scales, the pro- and metathorax with spreading crests; fore tarsi with the joints shortened and with curved claw-like spines on outer side; abdomen with dorsal crest on 1st segment. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below angle of disco-cellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

1443. **Pronotestra silenides.**

Mamestra silenides, Staud. Iris, vii. p. 273, pl. ix. f. 14 (1894); id. Cat. Lep. pal. p. 160.

♂. Head ochreous, the frons with blackish bar above; thorax grey-white mixed with rufous, the patagia with some black scales above; tarsi black with ochreous rings; abdomen grey mixed with brown, the anal tuft ochreous. Fore wing red-brown, the area before the antemedial line, the inner medial area, and the terminal area suffused with blue-white; a slight blackish streak in base of submedian fold; subbasal line double, waved, from costa to submedian fold; antemedial line double, slightly angled inwards below costa and strongly on vein 1; claviform defined by black, pointed

at extremity and reaching postmedial line; orbicular and reniform large, blue-white defined by black, the former round; a medial line oblique from costa to lower angle of cell, then incurved and waved; postmedial line double, dentate, bent outwards below costa and strongly incurved below vein 4; subterminal line indistinct, white, defined on inner side by a brown patch at costa and dentate black marks between veins 5 and 2, angled outwards at vein 7 and dentate at veins 4, 3; a waved black terminal line with short

Fig. 37.—*Pronotestra silenides*, ♂. ½.

black streaks before it at middle and longer streak above vein 3; cilia with a waved black line through them. Hind wing grey, uniformly suffused with fuscous; the cilia pale, with a dark line through them; the underside white irrorated with brown, a discoidal spot and curved postmedial line.

Ab. 1. Paler; fore wing less suffused with red-brown.

Hab. Spain, Andalusia; Algiers, 1 ♂; Tunis, 1 ♀; Syria, Jerusalem, in Coll. Püngeler. *Exp.* 34 millim.

Genus **AGLOSSESTRA**, nov.

Type, *A. deserticola*.

Proboscis aborted, small; palpi obliquely porrect and fringed with hair; frons with truncate conical prominence with corneous plate below it; eyes large, rounded; antennæ of male bipectinate, with moderate branches; head and thorax clothed with scales and hair, the crests slight; fore tarsi with the joints short, with lateral series of curved claws longer at extremity of joints; abdomen with dorsal crest at base. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below angle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

1444. **Aglossestra deserticola**, n. sp.

♂. Head and thorax red-brown mixed with white; tarsi with dark bands; abdomen white slightly irrorated with red-brown. Fore wing white, mostly suffused and irrorated with red-brown; subbasal line defined by white on outer side, waved, from costa to submedian fold; antemedial line oblique, waved, defined by white on inner side; claviform slightly defined by red-brown; orbicular and reniform white defined by red-brown, the former small, round,

the latter rather quadrate and with dark patch on its lower part; postmedial line defined by white on outer side, dentate and produced to white points on the veins, bent outwards below costa, excurved to vein 4, then incurved; subterminal line white, diffused, angled outwards at vein 7, excurved at middle and dentate on veins 4, 3, angled inwards and forming a white patch in submedian

Fig. 38.—*Aglossestra deserticola*, ♂. ½.

fold; a terminal series of small black lunules; cilia rufous intersected with white. Hind wing white, the terminal area tinged with rufous; the underside with discoidal point and sinuous postmedial line showing through to upperside.

Hab. Egypt, Suez (*J. J. Walker*), 1 ♂ type. *Exp.* 36 millim.

Genus **EPIA**.

Type.

Epia, Hübn. Verz. p. 214 (1827) ..... *irregularis.*

Proboscis fully developed; palpi short, upturned, the 2nd joint fringed with hair in front; frons with truncate conical prominence on lower part with corneous plate below it; eyes large, rounded; antennæ of male ciliated; head and thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; fore tibia with long curved claw-like spines on outer side of proximal joints; abdomen with dorsal crest on basal segment. Fore wing rather short and broad, the apex rounded; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the postmedial line bent outwards below costa to near subterminal line, then obliquely curved ..... *picturata.*

B. Fore wing with the postmedial line not bent outwards below costa to near postmedial line.

a. Fore wing with the postmedial line strongly incurved below vein 2.

a^1. Fore wing largely suffused with rufous ..... *irregularis.*

b^1. Fore wing with hardly any rufous tinge.

a^2. Fore wing with the basal area whitish ..... *aberrans.*

b^2. Fore wing with the basal area not whitish.

a^3. Fore wing with black streaks on terminal area below veins 5, 4, 3.

a^4. Fore wing with the subterminal line dentate on veins 4, 3, and forming a distinct ≷-mark, and with prominent dentate black marks before it. *capsularis.*

b^4. Fore wing with the subterminal line slightly angled at veins 4, 3, and with slight dentate black marks before it..... *minorata.*

b^3. Fore wing without black streaks on terminal area below veins 5, 4, 3.
a^4. Fore wing with slight black streak below base of cell, the antemedial line evenly curved from costa to vein 1 ..... *cetrapela.*
b^4. Fore wing without black streak below base of cell, the antemedial line waved.
a^5. Fore wing suffused with brown, the subterminal line dentate at veins 4, 3 ..... *nisus.*
b^5. Fore wing whitish suffused with fuscous, the subterminal line not dentate at veins 4, 3 ... *circumvadis.*
b. Fore wing with the postmedial line nearly straight below vein 2.
a^1. Fore wing with the ground-colour reddish brown.
a^2. Fore wing with the orbicular round, the reniform small, lunulate ..... *mendax.*
b^2. Fore wing with the orbicular elongate, the reniform large, constricted at middle..... *renati.*
b^1. Fore wing whitish tinged with reddish brown ..... *silenes.*
c^1. Fore wing whitish tinged with grey-brown ..... *christophi.*

*1445. Epia picturata. (Plate LXXXIV. fig. 15.)

Dianthœcia picturata, Alph. Hor. Soc. Ent. Ross. xvii. p. 73, pl. 3. f. 53 (1882); Staud. Cat. Lep. pal. p. 161.

♂. Head and thorax grey mixed with dark brown; tegulæ with black line near upper edge; patagia with black line near edges; tarsi banded with black. Fore wing grey with a violaceous tinge and largely suffused with brown except on marginal areas; subbasal line represented by a black streak excurved from costa to base and a similar one from median nervure to base defined by white below, and with a black streak below it curved outwards to antemedial line, which is defined by white on inner side, angled outwards below costa, then strongly inwards in cell, then outwards to submedian fold, then recurved to vein 1 near base; claviform moderate, defined by black, a somewhat bidentate white patch beyond it on base of vein 2; orbicular and reniform with brownish centres and whitish annuli defined by black, the former very oblique elliptical, open above and below, the latter much curved; postmedial line double, bent outwards below costa to close to subterminal line, then obliquely curved, the inner line minutely waved, the outer sinuous, some white points beyond it on costa; subterminal line whitish, defined by brown on inner side and slightly on outer except towards costa, obliquely curved; a fine black terminal line; cilia brown, with whitish lines through them. Hind wing whitish tinged with brown and the terminal area suffused with fuscous; a curved postmedial line defined by whitish on outer side; a dark terminal line; cilia whitish, with a brown line through them; the underside whitish irrorated with brown, a curved postmedial line and diffused subterminal band.

Hab. W. Turkestan, Sarawschan, Issyk-kul in Coll. Püngeler; E. Turkestan, Ili. *Exp.* 34 millim.

1446. Epia irregularis.

Noctua irregularis, Hüfn. Berl. Mag. iii. p. 394 (1767); Staud. Cat. Lep. pal. p. 164.
Noctua echii, Bork. Eur. Schmett. iv. p. 166 (1792); Hübn. Samml. Eur. Schmett., Noct. f. 90; Dup. Lép. Fr. vi. p. 308, pl. 92. f. 2.
Noctua brecciæformis, Esp. Schmett. iv. pl. 198. f. 5 (1790).
Noctua syngenesiæ, Scriba, Beitr. iii. pl. 13. f. 5 (1793).

Head and thorax white and bright rufous mixed: tegulæ with rufous medial line; patagia with dark line near upper edge; tarsi with white rings; abdomen white tinged with rufous. Fore wing ochreous white mostly suffused with rufous, the veins slightly streaked with white; a double, waved subbasal line from costa to submedian fold; the antemedial line double, waved, oblique, the outer line more prominent; claviform defined by rufous; orbicular and reniform white, defined by rufous and with slight brownish centres, the former round or somewhat elliptical; a waved medial line; postmedial line double, the inner line more prominent,

Fig. 39.—*Epia irregularis*, ♂. ½.

somewhat dentate, bent outwards below costa, slightly incurved at discal fold and strongly below vein 4, some white points beyond it on costa; subterminal line white, irregular, defined by slight dentate dark marks before it at middle, angled outwards at vein 7 and dentate at veins 4, 3; cilia chequered rufous and white. Hind wing whitish suffused with fuscous brown, the terminal area darker; cilia white; the underside white mostly suffused with pale brown, a discoidal lunule and curved postmedial and subterminal bands.

Hab. Britain, Leech Coll.; France; Germany, Zeller Coll.; Switzerland, Frey Coll.; Austria; Hungary, D'Emmick Coll.; Italy; Dalmatia; S. Russia; Asia Minor, Pontus; W. Turkestan, Issyk-kul; E. Turkestan, Ili. *Exp.* 34–36 millim.

Larva. Meyr. Brit. Lep. p. 78; Barrett, Lep. Brit. iv. p. 226, pl. 161. f. 3.

Pale brownish, with darker brown dorsal and lateral stripes, the former composed of V-shaped marks most prominent on abdominal somites; subdorsal line indistinct, whitish, narrowly edged with brown. Food-plants: *Silene otites* and *Gypsophila paniculata*. S.

1447. Epia aberrans.

Dianthœcia aberrans, Ev. Bull. Mosc. 1856, iii. p. 104; Staud. Cat. Lep. pal. p. 164.
Dianthœcia admiranda, Oberth. Ét. Ent. v. p. 77, pl. 7. f. 11 (1880).
Epia claripennis, Butl. Trans. Ent. Soc. 1886, p. 134.

Head and thorax white, tinged with reddish brown on palpi, frons, and tegulæ; pectus and legs tinged with fuscous, the tarsi with pale rings; abdomen white tinged with brown. Fore wing white, the area from just before the antemedial line to just beyond the postmedial tinged with red-brown and more or less suffused with black; subbasal line represented by black striæ from costa and cell; antemedial line double, waved, oblique; claviform defined by black; orbicular and reniform with brownish centres and white annuli defined by black, the former oblique elliptical, the latter with its lower part suffused with black; an indistinct waved medial line; postmedial line double, the outer indistinct, dentate, bent outwards below costa, excurved to vein 4, then strongly incurved, some white points beyond it on costa; subterminal line white defined by pale reddish brown on each side and with two or three small dentate black marks on inner side at middle, slightly excurved below costa and at middle; a terminal series of slight lunules. Hind wing white, more or less tinged with fuscous brown, especially on terminal area; the underside white slightly irrorated with brown, a discoidal spot and curved postmedial line.

Hab. E. Siberia, Ussuri, Amurland, 1 ♂; Japan (*Pryer*), 1 ♀, Nikko (*Pryer*), 1 ♂ type *claripennis*. *Exp.* 34 millim.

1448. Epia capsularis. (Plate LXXXIV. fig. 16.)

Dianthœcia capsularis, Guen. Noct. ii. p. 22, pl. 8. f. 3 (1852); Smith, Cat. Noct. N. Am. p. 117.
Raphia propulsa, Wlk. xi. 529 (1857).

Head and thorax dark brown mixed with grey; frons above and vertex of head with black bars; tegulæ with black medial line; patagia edged by black and white scales above; tarsi with pale rings; abdomen pale ochreous, more or less tinged with brown. Fore wing lilacine grey suffused and irrorated with pale brown; a double, waved, black subbasal line bent inwards to base above vein 1; a double sinuous antemedial line; claviform small or moderate, acute at extremity, defined by black and often filled with black; orbicular and reniform large, defined by black, the former round, with white annulus incompletely defined above and below, the latter with its centre defined by brown and some white on inner side of annulus; an indistinct irregular medial line incurved below cell; postmedial line double, the inner strong, bent outwards below costa, slightly incurved at discal fold, incurved and waved below vein 4, some white points beyond it on costa; postmedial area suffused with white, bent outwards below costa to apex; subterminal line whitish, angled outwards at vein 7, dentate

to termen at veins 4, 3, and bent outwards to tornus, with black streaks from before it to termen in interspaces between veins 2 and 5; cilia intersected with white. Hind wing whitish suffused with brown; a dark terminal line; cilia white at tips; the underside white irrorated with brown, a dark discoidal lunule and sinuous postmedial line.

Hab. Canada; U.S.A., E. States, Massachusetts, New Jersey, Wisconsin, Racine (*Meske*), 1 ♂, Virginia, Florida, St. John's Bluff (*Doubleday*), 2 ♂, 1 ♀, type and type *propulsa*, New Mexico. *Exp.* 34 millim.

*1449. Epia minorata. (Plate LXXXIV. fig. 17.)

Mamestra minorata, Smith, Pr. U.S. Nat. Mus. x. p. 467 (1887); id. Cat. Noct. N. Am. p. 122.

♀. Head and thorax mixed with red and dark brown scales; frons with blackish bar; tegulæ with slight dark line; patagia with blackish line near upper edge; abdomen ochreous whitish irrorated with fuscous. Fore wing whitish suffused with pale and dark brown; subbasal line double filled in with whitish, waved, from costa to submedian fold; antemedial line double, oblique, waved, angled inwards on vein 1; claviform represented by an ill-defined blackish patch with pale patch beyond it; orbicular and reniform moderate, brown with strong white annuli slightly defined by brown; postmedial line double, minutely dentate, bent outwards below costa, incurved below vein 4 and dentate on vein 1, some white points on costa beyond it; subterminal line white, angled outwards at vein 7 and slightly dentate on veins 4, 3, with slight dentate black marks before it at middle, and black streaks from it to termen above veins 3, 4, 5; a terminal series of small black lunules. Hind wing fuscous brown, the cilia pale with a brown line through them; the underside whitish irrorated with brown, a discoidal spot and curved postmedial line.

Hab. U.S.A., Colorado, California, in U.S. Nat. Mus. *Exp.* 32 millim.

*1450. Epia ectrapela. (Plate LXXXIV. fig. 18.)

Mamestra ectrapela, Smith, Ent. News Philad. ix. p. 249 (1898); Dyar, Cat. Lep. N. Am. p. 156.

♂. Head and thorax ochreous white mixed with brown; tegulæ and patagia whitish, the former with diffused blackish medial line, the latter edged with blackish; tarsi blackish ringed with white; abdomen reddish ochreous. Fore wing whitish thickly irrorated and suffused with brown; a slight black streak below base of cell intersected by the subbasal line, which is defined by whitish on outer side; antemedial line strong, black defined by pale colour on inner side, evenly curved from costa to vein 1 where it is angled inwards on vein 1, then outwards above inner margin; claviform

elongate, defined and almost filled in with black, a whitish patch above it on base of vein 2; orbicular and reniform large, defined by black, the former whitish with small brown centre, rounded, the latter with brown centre and slight white annulus; postmedial line defined by whitish on outer side, minutely dentate, bent outwards below costa, incurved below vein 4, some pale points beyond it on costa; subterminal line white, defined on inner side by slight dentate black marks at middle, angled outwards at vein 7 and strongly dentate at veins 4, 3; a terminal series of small black lunules; cilia brown intersected with white. Hind wing whitish suffused with brown; the terminal area brown; cilia white with a brown line through them; the underside white irrorated with brown, a discoidal lunule, the terminal area suffused with brown.

Hab. Canada, Br. Columbia, Agnes Lake, in U.S. Nat. Mus.; U.S.A., Colorado, Gasfield Co. *Exp.* 34 millim.

1451. Epia nisus.

Noctua nisus, Germ. Faun. Ins. Eur. xxii. pl. 18 (1812); Staud. Cat. Lep. pal. p. 163.
Dianthœcia sancta, Staud. Stett. ent. Zeit. 1859, p. 213.

Head and thorax grey mixed with dark brown and red-brown; tibiæ and tarsi blackish ringed with white; abdomen ochreous white mixed with brown. Fore wing grey, mostly suffused and irrorated with reddish brown; the subbasal line double, waved, from costa to submedian fold; antemedial line double, waved; claviform well-developed, defined by black; orbicular and reniform whitish, the former oblique elliptical, open above; an indistinct waved medial line; postmedial line double, minutely dentate, bent outwards below costa and strongly incurved below vein 4; some white points on costa towards apex; subterminal line defined by brown on inner side and by some dentate black marks at middle, the line dentate, angled outwards at veins 7, 4, 3; the apex suffused with white; a terminal series of minute dentate black marks. Hind wing brown, the interspaces whitish towards base; cilia white with a brown line through them; the underside white thickly irrorated with brown, a discoidal spot and curved postmedial line.

Ab. 1. *sancta*. Darker, the fore wing greyer, orbicular and reniform with brown centres and white annuli defined by black, the former round.

Hab. Spain, Andalusia, 1 ♂, Castille; Sicily. *Exp.* 38 millim.

*1452. Epia circumvadis. (Plate LXXXIV. fig. 19.)

Mamestra circumvadis, Smith, Journ. N.Y. Ent. Soc. x. p. 42 (1902); Dyar, Cat. Lep. N. Am. p. 156.

♂. Head and thorax white slightly mixed with brown; frons with black bar; tegulæ with ill-defined black line; two black spots behind tegulæ; patagia with some black scales near upper edge; abdomen pale reddish brown dorsally tinged with fuscous, the crest

at base white. Fore wing white, suffused in parts with fuscous brown; three obliquely placed black spots at base and an oblique streak above base of inner margin; antemedial line double, the inner line less distinct, oblique, waved; claviform large, filled in with blackish and indistinctly defined by black, a dentate white mark beyond it on base of vein 2; orbicular and reniform white defined by black and with slight fuscous centres, the former round; an indistinct waved medial line; postmedial line double, the outer indistinct, dentate, bent outwards below costa, excurved to vein 4, then incurved, more strongly below vein 2, some white points beyond it on costa; subterminal line diffused, white, defined on inner side by slight dentate black marks below costa and at middle and with a slight black mark beyond it in discal fold, excurved at vein 7 and middle; a terminal series of small black lunules; cilia chequered brown and white. Hind wing pale suffused with fuscous brown especially on terminal area; cilia white and fuscous; the underside whitish, the costal and terminal areas irrorated with fuscous, a black streak in cell, discoidal lunule and curved postmedial line.

Hab. Canada, Alberta, Calgary, in Coll. Wolley-Dod. *Exp.* 36 millim.

1453. **Epia mendax.** (Plate LXXXIV. fig. 20.)

Hadena mendax, Staud. Hor. Soc. Ent. Ross. xiv. p. 383 (1878); id. Cat. Lep. pal. p. 160.

Head and thorax red-brown mixed with whitish; tegulæ with black medial line and black tips, patagia edged with black; tarsi with pale rings; abdomen whitish suffused with pale reddish brown. Fore wing rufous slightly suffused and irrorated with black; a double, waved subbasal line ending on the black streak in base of submedian fold; antemedial line double, waved, angled inwards on vein 1 and outwards above inner margin; claviform rather small, defined by black; orbicular and reniform small, with prominent white annuli defined by black, the former round; an indistinct irregular medial line; postmedial line defined by whitish on outer side, minutely dentate, bent outwards below costa, then oblique, some white points beyond it on costa; subterminal line represented by somewhat dentate white marks defined on inner side by small dentate black marks, stronger at middle, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of black lunules; cilia brown intersected with ochreous. Hind wing pale suffused with brown, especially in female; the veins and terminal area brown; cilia ochreous at base, with brown medial line and white tips; the underside whitish, the costal area irrorated with brown, a slight discoidal lunule, sinuous postmedial line, and diffused subterminal band.

Hab. Asia Minor, Pontus, 1 ♂, 1 ♀, Bithynia, Taurus. *Exp.* 34 millim.

*1454. Epia renati.

Mamestra renati, Oberth. Bull. Soc. Ent. Fr. 1890, p. 187.
Mamestra magdalenæ, Oberth. Ét. Ent. xx. p. 68, pl. 9. f. 157 (1896); Staud. Cat. Lep. pal. p. 158.

♀. Head and thorax clothed with red-brown, grey, and fuscous scales; frons with black bar; tegulæ with black medial line, patagia with black line near upper edge; tegulæ and tarsi ringed with white; abdomen pale brown. Fore wing red-brown with a greyish tinge and slight fuscous suffusion in parts; subbasal line defined by white on outer side, angled outwards on subcostal and median nervures and ending at submedian fold; antemedial line double at costa, then single and defined by white on inner side, acutely angled inwards on the veins and outwards in submedian fold and above inner margin; claviform minute, indistinctly defined by black; orbicular and reniform with brown centres and white annuli defined by black, the former small, elongate elliptical, the latter large, constricted at middle and prominently marked with white at lower extremity; postmedial line defined by white on outer side, dentate and produced to points on the veins, strongly bent outwards below costa, then oblique, some white points beyond it on costa; subterminal line represented by a series of small white lunules with dentate black marks before them, slightly angled outwards at vein 7 and somewhat dentate at veins 4, 3; a terminal series of small black lunules; cilia intersected with white and with black line through them. Hind wing whitish tinged with brown, the veins and terminal area suffused with brown, a terminal series of blackish striæ; cilia whitish; the underside white, the veins streaked with brown, the costal and terminal areas irrorated with brown, a discoidal lunule and sinuous postmedial line.

Hab. France, Pyrenees, Vernet type† ♀ in Coll. Oberthür. *Exp.* 40 millim.

1455. Epia silenes.

Noctua silenes, Hübn. Eur. Schmett., Noct. f. 653 (1827); Dup. Lép. Fr., Suppl. iv. p. 219, pl. 69. f. 2; Staud. Cat. Lep. pal. p. 164.
Dianthœcia sejuncta, Herr.-Schäff. Schmett. Eur. ii. p. 249, f. 391 (1843).

Head and thorax clothed with white and reddish-brown hair; tegulæ with dark medial line; patagia with dark edges; tarsi with pale rings; abdomen ochreous white mixed with brown. Fore wing ochreous white suffused with reddish brown, the inner antemedial and postmedial areas white with a slight violaceous tinge; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved; claviform moderate, defined by black; orbicular and reniform large, with brown centres and white annuli defined by black, the former rather oblique elliptical; an indistinct waved medial line excurved from costa to median nervure; postmedial line double, slightly waved, bent outwards below costa, slightly incurved at discal fold and strongly below vein 4, some white points beyond it on costa; subterminal line white, defined

on inner side by dentate black marks below costa and at middle, angled outwards at vein 7 and dentate to termen on veins 4, 3; a terminal series of small black lunules; cilia brown intersected with white. Hind wing pale suffused with brown, the veins and terminal area brown; a white mark on termen below vein 2; cilia white, with a brown line through them; the underside whitish irrorated with brown, an indistinct sinuous postmedial line.

Hab. S. France; Spain; Sicily; Hungary, Leech Coll.; Greece; Armenia; Syria, Mardin. *Exp.* 34 millim.

1456. Epia christophi. (Plate LXXXIV. fig. 21.)

Dianthœcia christophi, Möschl. Wien. ent. Mon. 1862, p. 235; Staud. Cat. Lep. pal. p. 163.
Dianthœcia corrupta, Herz. Iris, xi. p. 256 (1898).

Head and thorax white slightly tinged with brown; palpi fuscous at sides; frons and vertex of head with fuscous bars; tegulæ with a black medial line; patagia edged with black; abdomen white slightly tinged with fuscous. Fore wing white, slightly tinged and irrorated with brown; subbasal line black, defined by white on outer side, waved from costa to submedian fold and bisecting a black streak below base of cell; antemedial line double, waved; claviform moderate, strongly defined by black; orbicular and reniform with slight brown centres and prominent white annuli defined by black, the former round; a waved medial line; postmedial line double, minutely waved, bent outwards below costa, excurved to vein 4, then strongly incurved; some white points on costa towards apex; subterminal line white, with dentate black marks before it at middle, angled outwards at vein 7 and excurved at veins 4, 3; the apex suffused with white; a terminal series of black lunules; cilia intersected with white. Hind wing white slightly tinged with brown; the veins, a sinuous postmedial line, and diffused subterminal band brown; a terminal series of black lunules; cilia fuscous, whitish at tips; the underside white, the costal area irrorated with brown, a discoidal lunule, the postmedial line and subterminal band more prominent.

Ab. 1. *corrupta.* Darker, especially the hind wings.

Hab. Russia, Sarepta, 1 ♀; Siberia, Altai; W. Turkestan, Uliassutai, 1 ♂, 1 ♀, Pamirs; Mongolia, Urga; Tibet, Amdo; Amurland, Ussuri. *Exp.* 34 millim.

Larva. Yellowish white, with white dorsal, subdorsal, and lateral stripes.

Genus **CARDEPIA**, nov.

Type, *C. irrisor.*

Proboscis fully developed; palpi oblique; frons with truncate reniform prominence, excised below; eyes large, rounded; antennæ of male ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; fore tarsi with curved claw-like spines on outer side of 1st joint; abdomen with dorsal crest on basal segment. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8

to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with cell near base only.

A. Head, thorax, and fore wing not tinged with rufous ..... *irrisor*.
B. Head, thorax, and fore wing tinged with rufous..... *nova*.

1457. Cardepia irrisor.

Mamestra irrisor, Ersch. Fedtsch. Reis. p. 42, pl. 4. f. 53 (1874); Staud. Cat. Lep. pal. p. 158.
Mamestra albipicta, Christ. Rom. Mém. i. p. 119, pl. 8. f. 1 (1884).

Head and thorax white mixed with dark brown; antennæ ringed with black; abdomen ochreous white. Fore wing grey-white, often slightly tinged with rufous and thickly irrorated with pale brown and fuscous; subbasal line represented by double black striæ from costa and cell; antemedial line double, waved, angled inwards on vein 1; claviform small, defined by black; orbicular small, round, whitish defined by black; reniform large, with whitish annulus defined by black, its lower part filled in with fuscous; a faint medial shade; postmedial line defined by white on outer side, dentate, bent outwards below costa, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line white, defined by small fuscous dentate marks on inner side, angled outwards at vein 7 and dentate on veins 4, 3; a terminal series of small black lunules. Hind wing white slightly tinged with fuscous, the veins and terminal area suffused with fuscous, leaving a white patch on termen near tornus; cilia white; the underside white irrorated with fuscous, a discoidal lunule, sinuous postmedial line, and diffused subterminal band.

Ab. 1. *deserticola*, Bang-Haas, ined. Fore wing rather more ochreous; hind wing white, the veins and medial part of terminal area slightly tinged with fuscous.—Syria.

The claws on fore tarsi small, larger towards extremity of joints.

Hab. S.E. Russia; Syria, Jordan, 1 ♂, 1 ♀; Kirghistan; W. Turkestan, Tekké, 3 ♂, 1 ♀, Turcomania, Ferghana, Sarawschan, Issyk-kul; E. Turkestan, Kuldja, 1 ♂, 1 ♀. *Exp.* 30–34 millim.

1458. Cardepia nova.

Trichoclea nova, Smith, Trans. Am. Ent. Soc. xxix. p. 198.

Head and thorax rufous mixed with white; abdomen whitish irrorated with brown; tarsi with fuscous bands. Fore wing whitish thickly irrorated with rufous and in part suffused with fuscous; subbasal line represented by double striæ from costa and cell; antemedial line double, distinct at costa, then indistinct, oblique, waved; claviform minute, fuscous defined by black; orbicular and reniform with pale annuli defined by black, the former small, round, the latter with its lower part filled in with fuscous; a medial shade, oblique from costa to lower angle of cell, then dentate; postmedial line double at costa, bent outwards below costa,

then dentate and produced to black and white points on the veins, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line very indistinct, pale, defined on inner side by slight dentate dark marks at middle, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules;

Fig. 40.—*Cardepia nova*, ♂. ½.

cilia whitish with two brown lines through them. Hind wing white, the veins and terminal area suffused with fuscous; the underside with the costal and terminal areas irrorated with brown, a small discoidal spot and postmedial series of short streaks on the veins.

Hab. U.S.A., Colorado, Grand Junction (*Oslar*), 3 ♂, 1 ♀, New Mexico, Arizona, Tucson (*Kemp*), 1 ♀ cotype, Prescott (*Kunzé*), 2 ♀. *Exp.* 38 millim.

Genus **TRICHOCLEA.**

	Type.
Trichoclea, Grote, Papilio, iii. p. 30 (1883)	*decepta.*

Proboscis fully developed; palpi obliquely porrect, the 2nd joint fringed with hair, the 3rd short, porrect; frons with small rounded prominence with corneous plate below it; eyes large, round, not ciliated; antennæ of male ciliated; thorax clothed with hair and scales, the pro- and metathorax with slight spreading crests; tibiæ fringed with hair on outer side; fore tarsi with the 1st or first two joints with long curved claw-like spines on outer side; abdomen with dorsal crest on 1st segment. Fore wing with the termen slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base.

A. Fore wing with the antemedial line absent	*U-scripta.*
B. Fore wing with the antemedial line present.	
a. Fore wing with the ground-colour ferruginous red.....	*artesta.*
b. Fore wing with the ground-colour fuscous brown to olive-brown.	
a^1. Fore wing with more or less prominent whitish points on lower part of reniform	*albicolon.*
b^1. Fore wing without whitish points on lower part of reniform.	
a^2. Fore wing fuscous brown	*atalantica.*
b^2. Fore wing olive-brown	*cholica.*
c. Fore wing with the ground-colour grey more or less tinged with brown.	
a^1. Fore wing with white annulus to reniform.....	*fuscolutea.*

b^1. Fore wing without white annulus to reniform.
  a^2. Fore wing strongly suffused with brown ..... *sociabilis.*
  b^2. Fore wing slightly tinged with rufous ..... *decepta.*
  c^2. Fore wing grey slightly tinged with brown.
    a^3. Fore wing with the subterminal line white, dentate on veins 4, 3 ..... *demotica.*
    b^3. Fore wing with the subterminal line indistinct, not dentate on veins 4, 3.
      a^4. Hind wing with the terminal band pale brownish.
        a^5. Fore wing with the antemedial line very oblique from costa to submedian fold ..... *antica.*
        b^5. Fore wing with the antemedial line more erect from costa to submedian fold ..... *postica.*
      b^4. Hind wing with the terminal band deep fuscous *edwardsi.*

1459. Trichoclea U-scripta. (Plate LXXXIV. fig. 22.)

Mamestra U-scripta, Smith, Pr. U.S. Nat. Mus. xiv. p. 228 (1891); id. Cat. Noct. N. Am. p. 119.

♂. Head and thorax grey and fuscous with a brownish tinge; abdomen grey and fuscous, paler at base. Fore wing yellowish brown slightly irrorated with fuscous; the costal area and veins fuscous irrorated with white; subbasal and antemedial lines and claviform obsolete; orbicular and reniform small, the former hardly traceable, oblique elliptical, the latter with its upper part very indistinct, its lower with prominent white U-shaped mark with white streak on median nervure before it; postmedial line hardly traceable, bent outwards below costa, excurved to vein 4, then incurved, some white points on costa beyond it; a subterminal series of slight dentate dark marks, the terminal area darker; a series of pure white streaks from extremity of veins intersecting the cilia. Hind wing pale suffused with fuscous brown, the veins and termen darker; cilia whitish with a dark line through them intersected by a series of white streaks from extremity of veins; the underside whitish thickly irrorated with large brown scales.

Fore tarsi with rather long curved claw-like spines on outer side of joints.

Hab. U.S.A., Colorado (*Bruce*), 1 ♂, California, Sierra Nevada. *Exp.* 38 millim.

1460. Trichoclea artesta. (Plate LXXXIV. fig. 23.)

Mamestra artesta, Smith, Trans. Am. Ent. Soc. xxix. p. 197.

♂. Head and thorax pale red mixed with brown and white; antennæ whitish; abdomen pale ochreous, ventrally brownish. Fore wing pale red sparsely irrorated with white, more strongly on inner area and costal area beyond middle; subbasal line indistinct, defined by white on outer side, waved, from costa to submedian fold; antemedial line indistinct, defined by white on inner side, waved, angled inwards on the veins; claviform absent; orbicular and reniform with white annuli defined by brown, the former minute, round, with brown centre, the latter with white centre

defined by brown and its white annulus broken up into spots; postmedial line whitish, indistinct, somewhat dentate and produced to fuscous and white points on the veins, slightly bent outwards below costa, incurved below vein 4, some white points beyond it on costa; subterminal line white, angled outwards at vein 7 and excurved at middle; cilia brown, with a series of white points at base. Hind wing white, the veins and termen slightly tinged with brown; the underside with the costal area slightly irrorated with red.

Frons with slight vertical ridge; fore tarsi with long curved claws on the joints.

Hab. U.S.A., Illinois (*Kemp*), 1 ♂, Kansas, Colorado. *Exp.* 38 millim.

1461. Trichoclea albicolon.

Noctua albicolon, Sepp, Ins. ii. pl. 1. ff. 1–9 (1786); Hübn. Eur. Schmett., Noct. ff. 542–3; Dup. Lép. Fr. vii. p. 272, pl. 117. f. 3; Steph. Ill. Brit. Ent., Haust. ii. p. 195, pl. 24. f. 3; Staud. Cat. Lep. pal. p. 156.
Hadena egena, Led. Verh. zool.-bot. Ges. Wien, 1853, p. 371.
Hadena arida, Led. Verh. zool.-bot. Ges. Wien, 1855, p. 108, pl. 1. f. 7.
Mamestra odiosa, Staud. Iris, viii. p. 315 (1895); id. Cat. Lep. pal. p. 156.
Mamestra amydra, Püng. Iris, xiv. p. 182, pl. ii. f. 4 (1901).

Head and thorax blackish brown slightly mixed with grey; patagia with some black scales above; tarsi black with pale rings; abdomen brown mixed with grey. Fore wing dark yellowish or fuscous brown irrorated with black, the veins irrorated with grey; subbasal and antemedial lines double, waved, filled in with paler colour, the former extending to submedian fold; claviform defined by black, short; orbicular and reniform well-developed, with greyish annuli defined by black, the former round, the latter with white points on its outer and lower edges; an indistinct waved medial line; postmedial line double filled in with pale colour, dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved; some pale points on costa towards apex; subterminal line more or less broken up into ochreous-white points and defined by small dentate black marks on inner side, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules and a series of pale points at base of cilia. Hind wing whitish tinged with brown, the veins and terminal area brown; cilia yellowish white, sometimes with a dark line through them; the underside ochreous white irrorated with dark brown, a discoidal lunule and somewhat dentate sinuous postmedial line.

Ab. 1. *egena*. Fore wing paler, more luteous and even in colour.

Ab. 2. *arida*. Fore wing duller and more fuscous in colour; hind wing more uniform fuscous brown.

Ab. 3. *odiosa*. Fore wing dull ochreous brown; hind wing uniform fuscous brown.

Hab. Britain, Leech Coll.; France, Sand Coll.; Jutland, Leech Coll.; Germany, Zeller and Frey Colls.; N. Italy; Sweden; Russia, Livonia, Zeller Coll.; Armenia, 1 ♂; Khirgistan; W. Siberia, 1 ♂, Altai, 1 ♂; W. Turkestan, Ferghana, Tarbagatai Mts., Issyk-

kul, 1 ♂, 1 ♀; E. Turkestan, Kuldja, 1 ♂, 1 ♀, Korla, Aksu, type† *amydra* in Coll. Püngeler; Mongolia, Uliassutai, Urga; Tibet, Kuku-noor, 1 ♂, 1 ♀, Amdo. *Exp.* 38–44 millim.

Larva. Meyr. Brit. Lep. p. 87; Barrett, Lep. Brit. iv. p. 207, pl. 160. f. 1. Green; dorsal line fine, pale, dark-edged; spiracular line pale, including a darker line; head pale green. Food-plants: *Chenopodium*, *Atriplex*, *Sisymbrium*, etc. 7–8.

1462. **Trichoclea atalantica**, n. sp. (Plate LXXXIV. fig. 24.)

♂. Head and thorax dark brown slightly mixed with grey; pectus and legs greyer; abdomen ochreous brown, the ventral surface grey. Fore wing dark brown; subbasal line indistinct, blackish, waved, from costa to submedian fold; antemedial line oblique, waved, angled inwards on vein 1; claviform indistinctly defined by black; orbicular and reniform very indistinct, with slight grey annuli, the former oblique elliptical; an indistinct waved medial line; postmedial line dentate, bent outwards below costa and strongly incurved below vein 4; subterminal line represented by an obscure series of dark dentate marks; a terminal series of small black lunules. Hind wing fuscous brown; the underside greyer brown.

Hab. Madeira, Porto Santo (*Wollaston*), 1 ♂ type. *Exp.* 34 millim.

1463. **Trichoclea cholica**, n. sp. (Plate LXXXIV. fig. 25.)

Head and thorax ochreous slightly mixed with brown and grey; abdomen ochreous brown or greyish. Fore wing ochreous brown irrorated with fuscous; an indistinct double, waved subbasal line from costa to submedian fold; an oblique, waved antemedial line angled inwards on vein 1 and defined by greyish on inner side; claviform hardly visible, defined by a few dark scales; orbicular and reniform very indistinct, defined by a few dark scales, the former round; an indistinct curved medial band; postmedial line strongly dentate, bent outwards below costa and strongly incurved below vein 4; subterminal line indistinct, pale, defined by obscure somewhat dentate fuscous marks on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing suffused with fuscous brown, the terminal area rather darker; the underside greyish irrorated with brown, a discoidal spot and curved postmedial line with short dark streaks on the veins.

Hab. Kashmir, Nubra (*MacArthur*), 4 ♂, 3 ♀, type. *Exp.* 40 millim.

1464. **Trichoclea fuscolutea.** (Plate LXXXIV. fig. 26.)

Mamestra fuscolutea, Smith, Ent. News Philad. iii. p. 250, pl. x. f. 3 (1892); id. Trans. Am. Ent. Soc. xxi. p. 54.

♀. Head and thorax grey with a yellowish tinge and mixed with dark brown; tegulæ with slight dark medial line; fore tarsi with

series of curved claws on 1st joint, the first two having others above them, and claws at end of next two joints; abdomen brownish ochreous with dark irroration. Fore wing brownish white with an ochreous tinge and dark irroration; the subbasal line represented by indistinct double striæ from costa and cell; antemedial line indistinct, strongly excurved below cell and above inner margin and angled inwards on vein 1; claviform small, defined by blackish; orbicular and reniform with brown centres and white annuli defined by blackish, the former oblique oblong or elliptical, open above, the latter with its outer edge angled, its lower angle produced inwards to a streak on median nervure; postmedial line indistinct, dentate, bent outwards below costa, excurved to vein 4, then oblique; subterminal line white, defined on inner side by dark brown dentate marks and on outer side by dark marks, angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing whitish tinged with brown, the veins and terminal area brown; cilia white; the underside white, the costal area irrorated with brown, a small discoidal spot, sinuous postmedial line, and diffused subterminal band.

Hab. U.S.A., Colorado (*Bruce*), 2 ♀. *Exp.* 40 millim.

1465. Trichoclea sociabilis.

Mamestra sociabilis, Grasl. Ann. Soc. Ent. Fr. 1850, p. 412, pl. 10. f. 13; Herr.-Schäff, Eur. Schmett., Noct. f. 563; Staud. Cat. Lep. pal. p. 158.

Head and thorax grey mixed with brown and black; tegulæ with medial black line; tarsi banded with black; abdomen grey irrorated with brown. Fore wing grey suffused and irrorated with brown; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, indistinct except at costa; claviform rather small, defined by black; orbicular and reniform with grey annuli defined by black, the former small, round, the latter filled in with fuscous; an indistinct curved waved medial line; postmedial line dentate and produced to white points on the veins, double at costa, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line white, with small dentate black marks before it except towards costa, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules. Hind wing white tinged with brown, the veins and terminal area brown; the underside with the costal and terminal areas irrorated with brown, a discoidal lunule and diffused subterminal band.

The claws on fore tarsi small, longer towards extremities of joints.

Hab. S.W. France, 1 ♀, Zeller Coll. *Exp.* 32 millim.

1466. Trichoclea decepta. (Plate LXXXIV. fig. 27.)

Trichoclea decepta, Grote, Papilio, iii. p. 30 (1883); Smith, Cat. Noct. N. Am. p. 209.

Perigea paupera, Druce, Biol. Centr.-Am., Het. i. p. 279 (part.), nec Wlk.

Head and thorax ochreous white; palpi with black patch at

sides; tarsi banded with black; abdomen ochreous, whitish below. Fore wing ochreous white, suffused and irrorated with yellow-brown; the subbasal line represented by two black striæ from costa; antemedial line represented by two black striæ from costa, then ill-defined, double, irregularly dentate; claviform small, defined by black; orbicular and reniform defined by black, the former round, the latter with fuscous centre; an indistinct waved medial line arising from a black striga on costa; postmedial line with double black striæ at costa, bent outwards below costa, then dentate, excurved to vein 4, then incurved; subterminal line white, minutely waved, angled outwards at vein 7 and excurved at middle, defined on inner side by fuscous suffusion and small indistinct dentate blackish marks, the area beyond it suffused with fuscous; a prominent terminal series of black points. Hind wing white, the veins and terminal area suffused with fuscous; the underside with the costal and terminal areas slightly irrorated with fuscous, a prominent postmedial series of black points.

The tarsi with curved claw-like spines on first two joints, the one at extremity of 1st joint large.

Hab. U.S.A., Utah in Coll. Schaus, Arizona, Phœnix (*Kunze*), 1 ♂, 1 ♀; Mexico, N. Sonora (*Morrison*), 1 ♀, Godman-Salvin Coll. *Exp.* 30–34 millim.

1467. Trichoclea demotica. (Plate LXXXIV. fig. 28.)

Mamestra demotica, Püng. Iris, xv. p. 148, pl. v. ff. 8, 9 (1902).

♂. Head and thorax grey mixed with dark brown; tarsi banded with black; abdomen grey irrorated with dark brown. Fore wing grey tinged with brown; the subbasal and antemedial lines waved, double, filled in with greyish, the former extending to vein 1; claviform small, defined by black; orbicular and reniform moderate, defined by black, the former round; an indistinct medial line oblique from costa to lower angle of cell, where it is angled; postmedial line defined by grey on outer side, minutely dentate, bent outwards below costa, excurved to vein 4, then oblique; subterminal line white, defined on inner side by dentate black marks between veins 6 and 2, excurved at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules; cilia with fine pale line at base. Hind wing grey-white tinged with brown; a diffused fuscous subterminal band; the underside whitish, the costal area irrorated with brown, a discoidal spot, slight curved postmedial line, and terminal series of small black lunules.

Hab. W. Turkestan, Turcomania, 1 ♂; E. Turkestan, Aksu, type † in Coll. Püngeler. *Exp.* 34 millim.

1468. Trichoclea antica. (Plate LXXXIV. fig. 29.)

Trichoclea antica, Smith, Trans. Am. Ent. Soc. xviii. p. 116 (1891); id. Cat. Noct. N. Am. p. 209.

Head and thorax brownish white slightly irrorated with fuscous; tarsi banded with black; abdomen brownish white. Fore wing

white irrorated with brown and fuscous; the subbasal line represented by black striæ from costa and cell; the antemedial line with a black spot beyond it on costa, very oblique from costa to submedian fold, then angled inwards on vein 1; claviform very small, defined by fuscous; orbicular moderate, round, slightly defined by fuscous; reniform with fuscous centre and grey annulus slightly defined by fuscous; the postmedial line defined by whitish on outer side, crenulate, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line whitish, minutely waved, angled outwards at vein 7 and excurved at middle, with fuscous marks on inner side at costa and vein 5; a terminal series of black points. Hind wing white, the veins and terminal area tinged with brown, the cilia white; the underside with the costal and terminal areas irrorated with brown, a discoidal point and curved subterminal series.

Fore tarsi with curved claw-like spines on outer side of 1st joint.

Hab. U.S.A., California, Los Angeles (*Coquillet*), 1 ♀, New Mexico, Albuquerque (*Oslar*), 1 ♂, Las Vegas (*Oslar*), 1 ♂, 2 ♀. *Exp.* 40 millim.

1469. Trichoclea postica. (Plate LXXXIV. fig. 30.)

Trichoclea postica, Smith, Trans. Am. Ent. Soc. xviii. p. 115 (1891); id. Cat. Noct. N. Am. p. 209.

Head, thorax, and abdomen brownish white slightly irrorated with fuscous; tarsi banded with black. Fore wing white irrorated with brown and fuscous; the subbasal line represented by blackish striæ from costa and cell; antemedial line with black point beyond it on costa, interrupted, waved, angled inwards on vein 1, nearly erect; claviform minute, defined by black; orbicular and reniform incompletely defined by black, the former round, the latter with some fuscous at centre; postmedial line crenulate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved; subterminal line pale, slightly defined by fuscous on inner side and by dark marks at costa and vein 5, dentate, angled outwards at vein 7, excurved at middle, and incurved at submedian fold; a terminal series of dark striæ. Hind wing white, the veins and terminal area suffused with fuscous; cilia white; the underside with the costal and terminal areas irrorated with brown, a discoidal lunule and subterminal series of points on the veins.

Fore tarsi with three curved claw-like spines on outer side of 1st joint and one on 2nd.

Hab. U.S.A., Colorado, Denver (*Oslar*), 1 ♂, 3 ♀. *Exp.* 36 millim.

1470. Trichoclea edvardsi. (Plate LXXXIV. fig. 31.)

Trichoclea edwardsii, Smith, Proc. U.S. Nat. Mus. x. p. 478 (1887); id. Cat. Noct. N. Am. p. 209.

♂. Head and thorax brownish grey; tarsi banded with black. Fore wing pale brownish grey; subbasal line only defined by some diffused black scales on each side of it below the cell; antemedial

line represented by some black scales forming traces of a waved line; claviform with its extremity slightly defined by fulvous; orbicular obsolete; reniform represented by a fuscous mark at lower angle of cell; postmedial line dentate and produced to a series of white points on the veins, bent outwards below costa, excurved to vein 4, then incurved and angled outwards on vein 1; subterminal line represented by a very obscure series of small fuscous dentate marks; a terminal series of black points. Hind wing white; the veins and terminal area broadly suffused with fuscous; cilia white; the underside with postmedial series of dark striæ on the veins.

Fore tarsi with curved claw-like spines on first four joints, three at base and one at extremity of 1st joint, two at extremity of 2nd joint, and those at extremities of 3rd and 4th joints larger.

Hab. U.S.A., California, Alameda Co., 1 ♂. *Exp.* 36 millim.

Genus HADULA.

	Type.
Hadula, Staud. Stett. ent. Zeit. 1889, p. 43	*insolita.*

Proboscis fully developed; palpi obliquely upturned, fringed with hair in front; frons with rounded prominence with corneous plate below it; eyes large, rounded; head and thorax clothed with hair and hair-like scales; abdomen with dorsal crest on 1st segment. Fore wing with veins 3 and 5 from close to angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near the base only.

Sect. I. Antennæ of male bipectinate, with long branches to apex.

A. Fore wing with the antemedial line very strongly angled outwards in submedian fold and inwards on vein 1 ..... *tancrei.*

B. Fore wing with the antemedial line moderately angled outwards in submedian fold and inwards on vein 1 ..... *corghossi.*

1471. Hadula tancrei. (Plate LXXXIV. fig. 32.)

Mamestra tancrei, Græs. Berl. ent. Zeit. 1892, p. 305; Staud. Cat. Lep. pal. p. 161.

Haderonia græseri, Püng. Soc. Ent. xiii. p. 58 (1898).

♂. Head and thorax blackish brown mixed with grey; tegulæ with dark medial line; abdomen fuscous and grey. Fore wing grey, mostly suffused and irrorated with brownish fuscous; subbasal line represented by double striæ from costa and cell; antemedial line indistinct, double, very highly waved and angled inwards on vein 1; claviform small, defined by blackish; orbicular and reniform large indistinctly defined by blackish, the former rather elongate elliptical, the latter filled in with fuscous, its lower part dilated and defined by a semicircular white annulus; postmedial line indistinct, dentate, bent outwards below costa and oblique below vein 4, some white points on costa beyond it; subterminal line whitish defined by brown on inner side, angled outwards at vein 7 and dentate on veins 3, 4, the area beyond it rather darker; a terminal series of black lunules; the cilia with fine white line at base and intersected

with white. Hind wing fuscous brown with pale terminal mark towards tornus: cilia pale with a dark line through them; the underside whitish thickly irrorated with brown, a discoidal spot and curved postmedial series of short streaks on the veins.

Ab. 1. *græseri*. Smaller, with the fore wing less distinctly marked.

Hab. W. Turkestan, Issyk-kul, Alexander Mts., type † in Coll. Püngeler; E. Turkestan, Ili, type † *græseri* in Coll. Püngeler, Kungess, 1 ♂. *Exp.* 42–44 millim.

1472. Hadula corghossi.

Mamestra korghossi, Alph. Hor. Soc. Ent. Ross. xvii. p. 65, pl. 2. f. 49 (1882); Staud. Cat. Lep. pal. p. 161.

Head and thorax fuscous brown mixed with grey; tegulæ with dark medial line; patagia with whitish patch; abdomen brownish grey. Fore wing grey, suffused and irrorated with fuscous or reddish brown; subbasal line represented by oblique double striæ below cell filled in with white, and with a whitish patch beyond it; antemedial line indistinct, double, irregularly dentate; claviform

Fig. 41.—*Hadula corghossi*, ♂. ½.

large or moderate, defined by blackish; orbicular and reniform with whitish annuli defined by blackish, the former more or less indistinct and elongate elliptical, the latter with its upper part more or less obsolescent, its lower part expanding inwards on median nervure, filled in with fuscous and with a prominent semicircular part of the white annulus below it; postmedial line very indistinct, double, strongly dentate, bent outwards below costa and oblique below vein 4, some white points beyond it on costa; subterminal line whitish, defined by brown on inner side, slightly angled outwards at vein 7 and dentate at veins 4, 3, the area beyond it darker; a terminal series of slight dark lunules. Hind wing whitish suffused with fuscous especially towards termen; the underside white slightly irrorated with brown; a small discoidal spot and traces of a curved postmedial line.

Hab. W. Siberia, Altai, 1 ♂; W. Turkestan, Turcomania, 1 ♂, 1 ♀; E. Turkestan, Kuldja, 2 ♂, 1 ♀, Thian Shán; E. Siberia, Amurland, 3 ♂. *Exp.* 40–46 millim.

Sect. II. Antennæ of male bipectinate, with long branches, the apex simple.

A. Hind wing nearly uniformly suffused with fuscous ..... *turpis*.
B. Hind wing whitish irrorated and the terminal area suffused with fuscous ..... *optima*.

1473. Hadula turpis.

Phœbophilus turpis, Staud. Iris, xii. p. 341, pl. 7. f. 8 (1900); id. Cat. Lep. pal. p. 177.

♂. Head and thorax grey-white slightly tinged with pale brown, the crests on metathorax and 1st segment of abdomen with fuscous; abdomen grey-white. Fore wing grey-white slightly tinged with red-brown and irrorated with fuscous; the subbasal line represented by blackish marks below costa and cell; the antemedial line rather indistinct, waved: claviform moderate, defined by fuscous; orbicular and reniform large, incompletely defined by fuscous, the

Fig. 42.—*Hadula turpis*, ♂. ½.

former round, the latter with some fuscous in its lower part; postmedial line indistinct, somewhat dentate, slightly bent outwards below costa and oblique below vein 4; subterminal line very indistinct, pale defined on inner side by small indistinct dentate brown marks, angled outwards at veins 7, 4, 3; a terminal series of small black lunules; cilia chequered fuscous and grey. Hind wing brownish grey suffused with fuscous; the cilia ochreous white; the underside grey irrorated with fuscous, traces of a discoidal point and sinuous postmedial line.

Hab. E. Turkestan, Thian Shán Mts., 1 ♂. *Exp.* 46 millim.

*1474. Hadula optima.

Haderonia optima, Alph. Rom. Mém. ix. p. 236, pl. xii. f. 7 (1897); Staud. Cat. Lep. pal. p. 161.

♂. Head and thorax grey-white mixed with brownish fuscous; abdomen grey-white irrorated with fuscous. Fore wing pale grey tinged with brown and slightly with ochreous and thickly irrorated with fuscous, the medial area slightly darker; the subbasal line represented by indistinct double strie from costa and cell; antemedial line slightly waved, oblique from costa to submedian fold, then angled inwards on vein 4; claviform small, very indistinctly defined; orbicular and reniform large, pale grey, ill-defined, the former irregularly rounded; traces of a medial line; postmedial line indistinct, obscurely and minutely dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line whitish defined by brown on inner side, dentate to near termen on veins 7, 6, 4, 3; a terminal series of small dark lunules; cilia

whitish with a dark line through them. Hind wing whitish, irrorated and the veins and terminal area suffused with fuscous; the underside white irrorated with fuscous, an indistinct sinuous postmedial line with dark streaks at the veins.

Hab. E. Turkestan, Altyn Tag, in Coll. Püngeler, Nan Schan Mts.; W. China. *Exp.* 38–42 millim.

Sect. III. Antennæ of male serrate and fasciculate.

A. Fore wing with ≷-mark in subterminal line ..... *præcipua.*
B. Fore wing without ≷-mark in subterminal line ..... *longicornis.*

1475. Hadula præcipua.

Mamestra præcipua, Staud. Iris, viii. p. 316 (1895); id. Cat. Lep. pal. p. 155.

♂. Head and thorax brown; metathoracic crest vinous red; abdomen reddish brown, the anal tuft redder. Fore wing grey-brown with a vinous-red tinge; a slight black streak below base of cell; the subbasal line represented by oblique black striæ from costa and cell; a prominent oblique black streak above inner margin before the antemedial line, which is indistinct and strongly angled outwards in submedian fold and above inner margin; claviform

Fig. 43.—*Hadula præcipua*, ♂. ½.

large, defined by black; orbicular and reniform large, defined by black, the former rather elliptical, the latter angled inwards on median nervure; postmedial line rather irregularly dentate, bent outwards below costa and incurved below vein 4, some ochreous points beyond it on costa; subterminal line ochreous white, with dentate dark marks before it on each side of discal and submedian folds and dark streaks in the interspaces beyond it, dentate to termen on veins 7, 4, 3. Hind wing fuscous brown, with fine ochreous line at base of cilia; the underside with the inner area paler, an indistinct oblique postmedial line.

Hab. Tibet, Kuku-noor, 1 ♂, Amdo. *Exp.* 48 millim.

*1476. Hadula longicornis. (Plate LXXXV. fig. 1.)

Mamestra longicornis, Græs. Berl. ent. Zeit. 1892, p. 306; Staud. Cat. Lep. pal. p. 155.

♂. Head, thorax, and abdomen grey mixed with pale reddish

brown; tarsi brown with pale rings. Fore wing grey, tinged in parts with ochreous and irrorated with dark brown, the medial area slightly darker; subbasal line represented by slight dark striæ from costa; antemedial line waved; claviform with its extremity defined by dark brown; orbicular and reniform large, whitish slightly defined by brown, the former round, the latter quadrate; postmedial line indistinct, dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line indistinct, whitish defined by fuscous on inner side, angled outwards at vein 7, excurved at middle and bent outwards to tornus; a terminal series of slight dark lunules. Hind wing whitish suffused with brown, especially on terminal area; a curved postmedial line showing through from underside; cilia whitish; the underside white irrorated with brown, some slight dark streaks on postmedial line.

Hab. E. Turkestan, Kashgar, type † in Coll. Püngeler. *Exp.* 44 millim.

Sect. IV. Antennæ of male with long cilia.

A. Fore wing without brown centres to orbicular and reniform.
  a. Fore wing with the orbicular and reniform whitish defined by black ..... *sabulorum.*
  b. Fore wing with the orbicular and reniform grey defined by brownish ..... *insolita.*
B. Fore wing with brown centres to orbicular and reniform ... *impia.*

1477. Hadula sabulorum.

Mamestra sabulorum, Alph. Hor. Soc. Ent. Ross. xvii. p. 69, pl. 3. f. 58 (1882); Staud. Cat. Lep. pal. p. 156.
Mamestra distincta, Staud. Stett. ent. Zeit. 1889, p. 35.
Mamestra rhodina, Christ. Iris, vi. p. 91 (1893).

Head and thorax ochreous grey mixed with brown, a few black scales on edges of patagia; tarsi ringed with black; abdomen brownish grey. Fore wing ochreous grey irrorated with brown and black; the subbasal line represented by double black striæ from costa and cell; antemedial line rather indistinct, double, oblique, waved, arising from black points on costa; claviform small, defined by black; medial

Fig. 44.—*Hadula sabulorum*, ♂. ½.

line indistinct, curved, waved, arising from a black point on costa; orbicular and reniform with a whitish tinge, large, defined by black, the former round; postmedial line dentate and produced to black and grey streaks on the veins, double at costa, bent outwards below costa and incurved below vein 4, some pale points beyond

it on costa; subterminal line ochreous strongly defined on inner side by a series of somewhat dentate fuscous marks, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules. Hind wing whitish tinged with brown; the veins brown; terminal area fuscous, with whitish mark on termen near tornus; cilia white; the underside white irrorated with blackish, a slight discoidal lunule and curved postmedial series of points.

Ab. 1. *distincta*. Larger; fore wing with a slight violaceous tinge and more distinctly marked below.

Ab. 2. *rhodina*. Fore wing suffused with red-brown.

Hab. Armenia, Ordubad; W. Turkestan, Turcomania, Issyk-kul, 1 ♂, 1 ♀; E. Turkestan, Kuldja, 1 ♂, Kungess, 2 ♂, 1 ♀, Kashgar. *Exp.* 36–44 millim.

1478. Hadula insolita. (Plate LXXXV. fig. 2.)

Hadula insolita, Staud. Stett. ent. Zeit. 1889, p. 43; id. Cat. Lep. pal. p. 157.

Head and thorax pale grey-brown; tarsi banded with fuscous; abdomen grey. Fore wing brownish grey; the subbasal line represented by double brown striæ from costa and cell; antemedial line double, waved, rather oblique; claviform absent; orbicular and reniform large, incompletely defined above and below, the former round; a distinct medial line oblique from costa to lower angle of cell, then dentate; postmedial line indistinct, double, dentate, bent outwards below costa, somewhat incurved at discal fold, incurved below vein 4; subterminal line rather indistinct, brownish, with two or three small somewhat dentate black marks on it near discal fold and one in submedian fold, angled outwards at vein 7 and excurved at middle; traces of some minute terminal dark lunules. Hind wing whitish tinged with brown; the veins brown; the terminal area fuscous, with whitish mark on termen near tornus; the underside whitish irrorated with brown, a slight discoidal lunule and sinuous postmedial line showing through to upperside.

Hab. W. Turkestan, Issyk-kul, 2 ♂, 3 ♀; E. Turkestan, Kashgar. *Exp.* 40–42 millim.

*1479. Hadula impia. (Plate XCII. fig. 2.)

Mamestra impia, Püng. ined.

♂. Head, thorax, and abdomen brownish grey; tarsi fuscous with pale rings. Fore wing grey, thickly irrorated and suffused with brown; traces of a waved subbasal line from costa to submedian fold; antemedial line irregularly waved, defined by grey on inner side; claviform small, defined by brown; orbicular and reniform with brown centres and pale annuli defined by brown, the former round, open above, the latter indistinctly defined and constricted at middle; postmedial line dentate, defined by grey on outer side, slightly bent outwards below costa and oblique below vein 4, some pale points beyond it on costa; subterminal lin$_{e}$

dentate, white defined by brown on inner side, somewhat angled outwards at veins 7, 4, 3; a fine white line at base of cilia. Hind wing fuscous brown; the cilia white with a brown line through them; the underside whitish irrorated with brown, a sinuous postmedial line and diffused subterminal band.

Hab. E. Turkestan, Aksu, type † ♂ in Coll. Püngeler. *Exp.* 46 millim.

Sect. V. Antennæ of male minutely ciliated.

A. Fore wing with the antemedial line angled inwards on vein 1, the postmedial line incurved below vein 4 ..... *unica.*
B. Fore wing with the antemedial line not angled inwards on vein 1, the postmedial line oblique below vein 4 ..... *incommoda.*

1480. Hadula unica.

Hadena unica, Leech, P. Z. S. 1889, p. 509, pl. 51. f. 12.

♂. Head, thorax, and abdomen grey tinged with brown; tarsi with pale rings. Fore wing brownish grey irrorated with fuscous and the medial area slightly tinged with fuscous; a double waved subbasal line from costa to submedian fold; a double irregularly waved antemedial line; claviform small, defined by black; orbicular and reniform large, grey defined by black and with some brown in centres, the former rather elongate elliptical, the latter rather quadrate and angled inwards on median nervure; postmedial line double, dentate, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line pale, slightly defined by brown on inner side, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of black lunules. Hind wing ochreous whitish tinged with brown, the veins and terminal area suffused with brown, leaving some ochreous on termen towards tornus; the underside whitish irrorated with brown, a discoidal spot, sinuous postmedial line, and some points on termen.

Hab. Japan (*Pryer*), 1 ♂ type. *Exp.* 40 millim.

1481. Hadula incommoda.

Mamestra incommoda, Staud. Stett. ent. Zeit. 1888, p. 250; id. Rom. Mém. vi. p. 428, pl. 8. f. 3; id. Cat. Lep. pal. p. 159.
Mamestra lacrimosa, Græs. Berl. ent. Zeit. 1888, p. 328.

♂. Head and thorax purplish grey mixed with brown; abdomen reddish brown. Fore wing purplish grey irrorated and suffused with brown; subbasal line represented by a slight striga from costa; a triangular black mark below base of cell; antemedial line represented by a very indistinct oblique grey line from cell to inner margin; claviform filled in with dark brown, rather pointed at extremity; orbicular and reniform with grey annuli defined by brown, the former oblique elliptical, the latter inwardly oblique and placed on a diffused brown patch; an oblique brown line from beyond angle of cell to inner margin; postmedial line grey, minutely waved, bent outwards below costa and oblique below vein 4; subterminal line whitish, angled outwards at vein 7 and

excurved at middle, the area beyond it darker; a terminal series of small black lunules. Hind wing ochreous white suffused with brown, especially towards termen; cilia white with a brown line

Fig. 45.—*Hadula incommoda*, ♂. ½.

through them; the underside whitish, the costal and terminal areas irrorated with brown, a discoidal spot and curved postmedial line.

Hab. Amurland, Ussuri, 1 ♂. *Exp.* 34 millim.

Genus **NEPHELISTIS**, nov.

Type, *N. congenitalis*.

Proboscis fully developed; palpi upturned reaching vertex of head; frons with slight rounded prominence with corneous plate below it; eyes large, rounded; head and thorax clothed principally with scales, the pro- and metathorax with spreading crests; tibiæ fringed with hair; abdomen with large dorsal crest on basal segment. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

Sect. I. Antennæ of male bipectinate with rather long branches to near apex.

1482. **Nephelistis congenitalis**, n. sp.

Tæniocampa vellerea, Druce, Biol. Centr.-Amer., Het. ii. p. 484 (part.), nec Schaus.

♂. Head and thorax dark brown tinged with grey; abdomen fuscous brown. Fore wing brown suffused with purplish grey; subbasal line represented by some white scales from costa to submedian fold; antemedial line very indistinct, grey; the medial area

Fig. 46.—*Nephelistis congenitalis*, ♂. ½.

suffused with dark olive-brown from subcostal nervure to vein 1; the orbicular and reniform only defined by a few white scales on their inner and outer edges; the postmedial line indistinct, white, strongly bent outwards below costa, excurved to vein 4, then incurved, some paler suffusion beyond it and some white points on

costa; subterminal line represented by a series of white undulations on brown marks, angled outwards at vein 7 and excurved at middle. Hind wing fuscous brown with a reddish tinge, whitish towards base and inner margin; the underside yellowish white, the costal and terminal areas thickly irrorated with brown, a dark discoidal spot and sinuous postmedial line.

Hab. Guatemala, Las Mercedes (*Champion*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 34 millim.

Sect. II. Antennæ of male bipectinate with very short branches, the apex ciliated; mid tibiæ dilated, fringed with very long hair and with expansible tuft of long yellow hair; underside of both wings mostly clothed with bright ochreous androconia and hair to beyond middle.

A. Fore wing with the postmedial line incurved below vein 4 ... *clauda.*
B. Fore wing with the postmedial line obliquely curved.
a. Head and tegulæ rufous ..... *furva.*
b. Head and tegulæ purplish brown ..... *differens.*

1483. Nephelistis clauda.

Conservula clauda, Schaus, Trans. Am. Ent. Soc. xxi. p. 231 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 475.
Tæniocompa vellerea, Druce, Biol. Centr.-Am., Het. ii. p. 484 (part.), nec Schaus.

Head and thorax dark brown tinged with grey; tarsi with pale rings; abdomen dark grey-brown. Fore wing dark brown suffused with purplish grey and irrorated with whitish; traces of a waved whitish subbasal line from costa to submedian fold; an indistinct oblique waved antemedial line; the medial area suffused with black-brown from submedian nervure to vein 1; orbicular and reniform very indistinctly defined by grey, the former round; postmedial line grey slightly defined by blackish on inner side, strongly bent outwards below costa, then oblique and excurved at median

Fig. 47.—*Nephelistis clauda*, ♂. ½.

nervules; subterminal line represented by a very obscure series of whitish marks on diffused blackish patches, slightly angled outwards at vein 7 and excurved at middle; a fine whitish line at base of cilia. Hind wing fuscous brown; the cilia whitish with dark line at base. The underside of both wings in male clothed with bright ochreous hair and androconia to beyond middle except costal area; hind wing with black discoidal spot and sinuous postmedial line, in female whitish thickly irrorated with brown, the disk whiter.

Hab. Mexico, Jalapa (*Trujillo*), 2 ♂, 3 ♀, Godman-Salvin Coll. *Exp.* 30 millim. Type † in Coll. Schaus.

*1484. Nephelistis furva. (Plate LXXXV. fig. 3.)

Conservula furva, Schaus, J. N.Y. Ent. Soc. xi. p. 235 (1903).

♂. Head and tegulæ bright ferruginous slightly mixed with white, the latter tipped with white; thorax red-brown irrorated with white; pectus and legs rufous, the tarsi ringed with white; abdomen rufous irrorated with white, the anal tuft more fulvous. Fore wing bright chestnut: the costal area purplish fuscous; a purplish band before the oblique antemedial line from cell to inner margin; orbicular and reniform purplish with ill-defined whitish annuli, the former very oblique elliptical; some white points on terminal half of costa; postmedial line chestnut defined by white on outer side, straight, very oblique from below costa to inner margin, with a purplish band on its outer edge; subterminal line very ill-defined, whitish towards costa, slightly angled outwards at vein 7, then oblique; the veins of terminal area with slight dark streaks; cilia purplish brown. Hind wing yellowish white, the veins, terminal area, and a terminal line tinged with rufous; the underside with the costal area irrorated with rufous, a discoidal point and curved postmedial line.

Hab. Mexico, Orizaba, type † ♂ in Coll. Schaus. *Exp.* 30 millim.

1485. Nephelistis differens.

Hadena differens, Druce, Biol. Centr.-Am., Het. i. p. 294, pl. 27. f. 26 (1889).

Tæniocampa vellerea, Druce, Biol. Centr.-Am., Het. ii. p. 484, pl. 94. f. 8 (nec Schaus).

♀. Head and thorax deep purplish grey, the tegulæ and thoracic crest cupreous; abdomen fuscous brown, the dorsal crest cupreous. Fore wing dark purplish grey: the subbasal line represented by white striæ from costa and median nervure with cupreous suffusion before it; antemedial line indistinct, oblique, defined by the medial area below discal fold and stigmata being cupreous; orbicular and reniform defined by a slight blackish line except above and with a fuscous patch between them, the former oblique elliptical, confluent at lower extremity with the latter which is constricted at middle; postmedial line double, oblique, very slightly curved and not quite reaching costa; some whitish points on terminal half of costa; subterminal line defined by the area beyond it being cupreous except the veins and an apical patch, slightly angled outwards at vein 7, strongly inwards in discal fold, then somewhat dentate; a fine pale line at base of cilia. Hind wing fuscous brown with a reddish tinge, the interspaces whitish except towards termen; cilia whitish with a brown line near base; the underside whitish, the costal area brown irrorated with white, a dark discoidal point and sinuous postmedial line.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♀; Panama, Chiriqui (*Champion*), 3 ♀ type, Godman-Salvin Coll. *Exp.* 36–40 millim.

Sect. III. Antennæ of male ciliated; mid tibiæ of male dilated with a groove containing tufts of flocculent yellow hair and fringed with large curved scales.

1486. Nephelistis vellerea.

Tæniocampa vellerea, Schaus, Trans. Am. Ent. Soc. xxi. p. 237 (1894).
Conservula cedica, Druce, Biol. Centr.-Am., Het. ii. p. 475, pl. 93. ff. 9, 10 (1898).

♂. Head and thorax brown, the scales tipped with grey; abdomen grey-brown, the ventral surface darker, the anal tuft more ochreous. Fore wing dark brown suffused and irrorated with purplish grey, the postmedial area purplish grey; faint traces of an antemedial line, with the area before it rather greyer below the cell; the postmedial line pale, obliquely curved, not quite reaching costa; subterminal line indistinct, grey, excurved at vein 7 and middle; a

Fig. 48.—*Nephelistis vellerea*, ♂. ½.

fine pale line at base of cilia. Hind wing ochreous white, the veins, costal and terminal areas tinged with brown, especially towards apex; the underside with the costal area irrorated with brown.

Hab. Mexico, Jalapa, type† ♂ in Coll. Schaus, (*Trujillo*) 1 ♂ type *cedica*, Orizaba (*Bouchard*); Panama, Chiriqui (*Champion*), 1 ♀, Godman-Salvin Coll. *Exp.* 34–36 millim.

Genus HYDRŒCIODES, nov.

Type, *H. alala*.

Proboscis fully developed; palpi upturned, the 2nd joint fringed with hair in front, the 3rd short, oblique, hairy in front; frons with rounded prominence with curved corneous plate below it; eyes large, rounded, overhung by long cilia; head and thorax clothed with hair and scales, the vertex of head with large crest; the tegulæ produced upwards into a slight ridge; the pro- and meta-thorax with spreading crests; tibiæ fringed with rather long hair; abdomen with large dorsal crest on 1st segment. Fore wing rather narrow; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below angle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate to near apex.

A. Fore wing not suffused with brown ..... *xanthina*.
B. Fore wing suffused with brown..... *pexa*.

1487. Hydrœciodes xanthina, n. sp.

Xanthia alala, Druce, Biol. Centr.-Am., Het. ii. p. 485 (part.).

♂. Head, thorax, and abdomen yellow mixed with red; tegulæ with traces of medial line; patagia with dark line near tips. Fore wing yellow thickly irrorated with rufous; two slightly curved rufous subbasal lines from costa to submedian fold and another line from before antemedial line excurved below costa, then oblique to vein 1; the antemedial line waved, angled inwards in cell and on vein 1; claviform short, broad, and defined by brown at extremity; orbicular and reniform large, defined by rufous, the former round; medial line rufous, obliquely incurved from costa to lower angle of cell, then oblique and with some black irroration at its extremity on inner margin; postmedial line sinuous, bent outwards below costa, slightly angled at veins 6 and 4, then incurved, some pale points beyond it on costa; subterminal line excurved below costa

Fig. 49.—*Hydrœciodes xanthina*, ♂. ½.

and at middle, incurved at veins 5 and 2, some slight dark suffusion beyond it; the veins towards termen with dark streaks; a fine terminal dark line. Hind wing semihyaline yellow tinged with pink; the veins and terminal line brown; cilia yellow; the underside pale, the costal area irrorated with brown, a dark discoidal spot and sinuous postmedial line.

Hab. Mexico, Patycuaro (*Godman*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 34 millim.

*1488. Hydrœciodes pexa. (Plate LXXXV. fig. 4.)

Hydrœcia pexa, Schaus, J. N.Y. Ent. Soc. xi. p. 235 (1903).

♂. Head and thorax yellowish brown mixed with reddish brown and the hairs tipped with grey; palpi dark brown at sides; abdomen ochreous whitish, dorsally suffused with brown, the anal tuft ochreous. Fore wing orange-yellow, mostly irrorated and suffused with red-brown, leaving the antemedial area below cell and postmedial area except towards costa yellower; a curved slightly waved antemedial line; claviform short, yellow irrorated with rufous and defined by brown; orbicular and reni-

form yellow irrorated with rufous and defined by brown, the former round, the latter with white spots on its annulus; a medial line oblique from costa to median nervure, where it is angled, then inwardly oblique; postmedial line waved, bent outwards below costa, slightly incurved at discal fold and strongly below vein 4; subterminal line waved, slightly angled outwards at vein 7 and excurved at middle. Hind wing pale uniformly suffused with brown; the underside whitish irrorated with brown, a discoidal point and slight postmedial series.

Hab. Mexico, Oaxaca, type † ♂ in Coll. Schaus. *Exp.* 38 millim.

Sect. II. Antennæ of male ciliated.

A. Fore wing without white subterminal line.
  a. Fore wing with the ground-colour yellow.
    a^1. Fore wing with the medial line angled outwards to lower angle of cell ..... *alala*.
    b^1. Fore wing with the medial line not angled on median nervure ..... *azteca*.
  b. Fore wing dark brown suffused with red.
    a^1. Fore wing with the annulus of reniform yellow ..... *cauta*.
    b^1. Fore wing with the annulus of reniform white..... *leucopis*.
B. Fore wing with white subterminal line..... *leucogramma*.

1489. Hydrœciodes alala.

Xanthia alala, Druce, P. Z. S. 1890, p. 514; id. Biol. Centr.-Amer., Het. ii. p. 485, pl. 94. f. 11.

♂. Head and thorax golden yellow mixed with red-brown; abdomen yellow dorsally tinged with pink, the dorsal crest dark at tip. Fore wing golden yellow irrorated with red; a double sinuous subbasal red line from costa to submedian fold, with an oblique highly-waved line beyond it; a waved antemedial line angled inwards on subcostal nervure and vein 1; claviform defined by red; orbicular and reniform defined by red, the former round, the latter with annulus formed of red-defined spots; medial line oblique from

Fig. 50.—*Hydrœciodes alala*, ♂. ½.

costa to lower angle of cell, then inwardly oblique; postmedial line brown, dentate, bent outwards below costa, excurved to vein 4, then oblique; subterminal line excurved below costa and at middle, angled inwards at veins 5 and 2, the area beyond it suffused with brown; the veins with dark streaks towards termen; a fine dark terminal line. Hind wing pale yellow, the veins towards termen and terminal area tinged with red; the underside with curved postmedial line.

Hab. Mexico City (*Hoege*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 32 millim.

Subsp. 1. Abdomen dark red-brown; fore wing with three white spots on lower part of reniform; the area in, beyond, and above end of cell suffused with brown; hind wing suffused with brown in male, darker in female.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♂, 1 ♀, Godman-Salvin Coll.

1490. **Hydrœciodes azteca.** (Plate LXXXV. fig. 5.)

Hydrœcia azteca, Schaus, ined.

Head and thorax orange mixed with brown; palpi brown; tegulæ brown edged with orange; patagia orange edged with brown; tarsi brown with pale bands; abdomen brown, the ventral surface whitish irrorated with brown and the anal tuft ochreous. Fore wing orange-yellow thickly irrorated with rufous; the veins streaked with brown; a waved subbasal rufous line from costa to submedian fold; an oblique waved antemedial line defined by yellow on inner side; claviform defined by brown; orbicular and reniform moderate, defined by brown and with white points on their annuli; a prominent oblique slightly curved medial line; postmedial line somewhat dentate, bent outwards below costa, excurved to vein 4, then strongly incurved, some yellow points beyond it on costa; subterminal line angled outwards at vein 7 and excurved at middle, the area beyond it purplish brown except at apex; cilia dark brown. Hind wing ochreous white tinged with brown, especially on inner and terminal areas; the underside ochreous, the costal area irrorated with brown, a discoidal point and postmedial line on costal half.

Hab. Mexico, Jalapa, type † ♂ in Coll. Schaus; Orizaba, 1 ♀. *Exp.* 38 millim.

1491. **Hydrœciodes cauta.** (Plate LXXXV. fig. 6.)

Hydrœcia cauta, Schaus, J. N.Y. Ent. Soc. xi. p. 235 (1903).

Head, thorax, and abdomen dark brown, the vertex of head with some ochreous, the tegulæ with some red; legs irrorated with ochreous, the tibiæ and tarsi ringed with ochreous; abdomen with some ochreous in anal tuft, the ventral surface irrorated with ochreous. Fore wing dark brown, almost entirely suffused with deep fiery red; a dark waved antemedial line; reniform small, ochreous white with fiery-red centre; postmedial line minutely waved, bent outwards below costa, somewhat dentate at median nervure, then oblique, some ochreous points beyond it on costa; subterminal line red, defined by a dark shade on inner side, angled outwards at vein 7 and excurved at middle; a fine pale line at base of cilia. Hind wing fuscous brown with a yellowish tinge; cilia pale with a dark line through them and pinkish tips; the underside pale, thickly irrorated with dark brown, the costal area tinged with purplish pink, a black discoidal spot and curved strigiform postmedial line.

Hab. Costa Rica, 1 ♀, type † ♀ in Coll. Schaus; ♂ in Coll. Joannis. *Exp.* 30 millim.

1492. **Hydrœciodes leucopis**, n. sp. (Plate XCII. fig. 1.)

♂. Head and thorax rufous; antennæ ringed with white towards base; abdomen grey-brown, the anal tuft ochreous. Fore wing brown, the interspaces suffused with fiery red; an indistinct waved antemedial line; claviform absent; orbicular an ill-defined brown spot with two white points on it; reniform elliptical, pure white defined by brown and with small brown centre; postmedial line very indistinct, somewhat dentate, and with some white points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some ochreous points beyond it on costa; traces of a pale waved subterminal line; a fine pale line at base of cilia. Hind wing ochreous suffused with brown; the underside paler, the costal area thickly irrorated with brown, a discoidal lunule and curved postmedial line.

Hab. Peru, Huancabamba, 1 ♂ type. *Exp.* 30 millim.

1493. **Hydrœciodes leucogramma**, n. sp. (Plate LXXXV. fig. 7.)

♀. Head and thorax purplish pink tinged with brown; pectus and legs grey-brown; abdomen greyish fuscous, the extremity tinged with pink, the dorsal crest tipped with white. Fore wing purplish pink; the veins black-brown; the area beyond the cell suffused with black-brown; the submedian interspace and base of inner margin yellow thickly irrorated with fiery red; an indistinct oblique waved antemedial line angled inwards on vein 1; orbicular and reniform yellow thickly irrorated with fiery red, the former round, the latter with punctiform white line on its lower and outer sides and point at its upper inner angle; medial line represented by a striga from costa and an oblique waved line from beyond lower angle of cell to inner margin; postmedial line strongly dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line white, obsolescent towards costa, angled outwards at vein 7 and slightly incurved below vein 3. Hind wing fuscous brown; the underside rather paler, with slight discoidal point and curved postmedial line.

Hab. Brazil, Rio Janeiro, 1 ♀ type, Organ Mts., Tijuca (*S. R. Wagner*), 2 ♀; Paraguay, Neva Germania. *Exp.* 30 millim.

Genus TIRACOLA.

	Type.
Tiracola, Moore, P. Z. S. 1881, p. 351	*plagiata*.

Proboscis fully developed; palpi upturned, the 2nd joint thickly scaled, the 3rd short, oblique; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair and a few scales, the prothorax with triangular ridge-like crest, the metathorax with spreading areole; abdomen rather dorsally flattened, with rough hair at base and dorsal crests on basal segments. Fore wing with the apex somewhat produced, the termen obliquely curved and the cilia crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with the cell short; vein 2 from near angle; 3, 4 stalked; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle or shortly stalked; 8 anastomosing with the cell near base only.

1494. Tiracola plagiata.

Agrotis plagiata, Wlk. xi. 740 (1857); Moore, Lep. Ceyl. iii. p. 34. pl. 148, ff. 1, 1 *a*; Hmpsn. Moths Ind. ii. p. 282; Druce, Biol. Centr.-Am., Het. i. p. 286, pl. xxvii. f. 14.
Agrotis plagifera, Wlk. xi. 741 (1857).
Agrotis spectabilis, Wlk. xxxii. 704 (1865).
Agrotis grandirena, Herr.-Schäff. Corresp.-Blatt Regensb. 1868, p. 149.

Head and thorax varying from ochraceous or greyish, sometimes with an olive tinge, to ferruginous; palpi black except at tips; some black scales near upper edge of patagia; tibiæ irrorated with black; tarsi blackish with pale rings; abdomen fuscous brown, the ventral surface rufous irrorated with black, a sublateral series of black points. Fore wing varying from pale ochreous or greyish to rufous, brown or purple-brown, sometimes tinged with olive, and sparsely irrorated with black; subbasal line sometimes represented by black points on costa and in cell, the antemedial line by black points on costa and veins sometimes connected by a faint waved line, excurved from costa to vein 1; claviform absent; orbicular represented by part

Fig. 51.—*Tiracola plagiata*, ♂. ½.
(From Moths Ind. vol. ii.)

of the whitish annulus or absent; reniform large, whitish defined by black and its centre defined by black, its lower part filled in with fuscous or wholly filled in with fuscous; a more or less prominent medial line, oblique from costa to median nervure, then waved; postmedial line double and oblique from costa to vein 7, then represented by a series of black points on the veins sometimes connected by a crenulate line, excurved to vein 4, then incurved; in the darker specimens, the apical part of costal area paler or grey; subterminal line ochreous defined on each side by brown, indistinct towards costa, angled outwards at vein 7, incurved to vein 4, excurved to submedian fold and bent outwards to tornus, a dark point on its inner side above vein 5, the area beyond it often darker except at apex; a terminal series of black points usually present; cilia with fine ochreous line at base, some black in the crenulations. Hind wing whitish more or less suffused with brown, the terminal area darker; cilia whitish; the underside whitish, the costal area tinged with brown and irrorated with black, a slight discoidal point,

indistinct sinuous postmedial line or series of points on the veins and some terminal points.

Ab. 1. Hind wing uniform ochreous white. New Guinea.

Hab. Mexico, Jalapa (*Trujillo*), 2 ♀, Misantla (*Trujillo*), 1 ♀, Coatepec (*Brooks*), 1 ♀, Godman-Salvin Coll.; Cuba, Matangas (*Schaus*), 1 ♂, 1 ♀; Paraguay, Sapucay (*Foster*), 1 ♂, 2 ♀; W. China, Moupin (*Kricheldorf*), 1 ♂, 1 ♀; Sikhim (*Lidderdale*), 1 ♂; Bombay (*Leith*), 1 ♂; Canara (*Ward*), 2 ♀; Ceylon (*Wenham, Templeton, Mackwood*), 3 ♂, 2 ♀, type and type *plagifera*; Singapore (*Ridley*), 1 ♀; Borneo, Sarawak (*Wallace*), 1 ♀; Java (*Horsfield*), 1 ♂, 2 ♀; New Guinea; Queensland, Brisbane (*Turner*), 1 ♀; N. S. Wales, Moreton Bay (*Diggles*), 1 ♂ type *spectabilis*, Sydney (*Raynor*), 1 ♂; Tahiti (*J. J. Walker*), 1 ♀; Marquesas, Nuka-Hiva (*J. J. Walker*), 1 ♂. *Exp.* 42–68 millim.

Larva. Dull violet-brown; a few scattered grey points; dorsal stripe grey formed of triangular patches; a pale olivaceous sublateral stripe from 4th somite; head and legs violet-grey, the former small; 11th somite produced to a dorsal hump; hair fine. Food-plant, *Emilia*.

Genus **CHABUATA**.

	Type.
Chabuata, Wlk. xiv. 1034 (1857)	*ampla*.
Tricholita, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 215 (1875)	*signata*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint fringed with hair in front, the 3rd moderate; frons smooth; eyes large, rounded; head and thorax clothed with rough hair and scales, the prothorax with triangular crest, the metathorax with spreading crest; tibiæ clothed with rough hair; abdomen with dorsal crest at base and slight lateral fringes of hair. Fore wing with veins 3 and 5 from close to angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ bipectinate in both sexes; the branches short in female.

A. Fore wing bright rufous thickly irrorated with white ..... *notata*.
B. Fore wing dull reddish brown without white irroration . *signata*.
C. Fore wing dull brown irrorated with grey.
  a. Fore wing with the lines fairly distinct, a series of white points at base of cilia ..... *fistula*.
  b. Fore wing with the lines almost obsolete, no white points at base of cilia ..... *mutina*.
D. Fore wing ochreous suffused with brown ..... *inconspicua*.

1495. **Chabuata notata**. (Plate LXXXV. fig. 8.)

Tricholita notata, Streck. Lep. Rhop. & Het. Suppl. i. p. 9 (1898); Dyar, Cat. Lep. N. Am. p. 168.
Tricholita syrissa, Streck. Lep. Rhop. & Het. ii. p. 6 (1899); Dyar, Cat. Lep. N. Am. p. 168.

Head and thorax red-brown, the scales tipped with white; antennæ ochreous; abdomen brownish rufous, the ventral tuft purplish red, the hair tipped with white; anal tuft whitish at

extremity. Fore wing bright purplish red-brown irrorated with white; subbasal line obsolete; antemedial line very indistinct, oblique; claviform and orbicular absent; reniform white, the centre and upper part suffused with yellow, two fine rufous streaks crossing it in discal fold, the area round it rather darker; traces of an oblique medial line from cell to inner margin; postmedial line rather indistinct, minutely dentate, bent outwards below costa and slightly incurved below vein 4; subterminal line only defined by the area beyond it being rather darker, slightly angled outwards at vein 7 and excurved at middle; cilia fuscous brown slightly irrorated with white. Hind wing dull yellowish brown; the cilia redder, whitish at tips; the underside pale, tinged with purplish red and irrorated with brown, a discoidal spot and curved postmedial line.

Hab. U.S.A., Illinois, Chicago, 1 ♂, Nebraska. *Exp.* 34 millim.

1496. Chabuata signata.

Nephelodes signata, Wlk. Can. Nat. & Geol. v. p. 253 (1860); Smith, Cat. Noct. N. Am. p. 172.
Hydræcia semiaperta, Morr. Can. Ent. vi. p. 105 (1874).

♂. Head and thorax red-brown, the hairs tipped with greyish; abdomen red-brown, the anal tuft rufous. Fore wing red-brown,

Fig. 52.—*Chabuata signata*, ♂. ½.

the veins with slight dark streaks; the subbasal line represented by dark marks on costa and in cell; a waved antemedial line; orbicular and reniform defined by brown, the former small, round, the latter narrow, often with its lower part white and with white spots round its upper part; a diffused medial line oblique from costa to lower angle of cell where it is angled; postmedial line minutely waved, strongly bent outwards below costa and incurved below vein 4, angled outwards on vein 1; subterminal line diffused, ochreous, angled outwards at vein 7 and excurved at middle, the area beyond it darker, sometimes with some white scales on the veins; a fine dark terminal line. Hind wing dark reddish brown, the cilia redder; the underside ochreous irrorated with brown, the costal and terminal areas tinged with reddish, a black discoidal point and sinuous postmedial line.

Hab. Canada; U.S.A., Northern, Eastern, Middle and Central States, Massachusetts, Boston, 2 ♂, New York, Evans Centre, 1 ♂, Illinois, New Mexico. *Exp.* 34 millim.

1497. **Chabuata fistula.** (Plate LXXXV. fig. 9.)

Tricholita fistula, Harv. Can. Ent. x. p. 56 (1878); Smith, Cat. Noct. N. Am. p. 173.

Head and thorax dark brown mixed with grey; abdomen brown mixed with grey, the base pale. Fore wing dark brown with a reddish tinge, the costal and inner areas and veins suffused with grey; traces of a subbasal line from costa to submedian fold; an indistinct waved antemedial line angled outwards above inner margin; traces of a small claviform stigma edged with brown; orbicular a small brown annulus; reniform a lunule formed of small white spots, with a spot before it in lower angle of cell; traces of a medial line oblique from costa to median nervure where it is angled; postmedial line somewhat dentate, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4; subterminal line ochreous and brown, angled outwards at vein 7 and excurved at middle; a fine dark terminal line; cilia mixed with grey and with white points at end of veins. Hind wing whitish irrorated with brown, the terminal half suffused with brown, more uniformly suffused in female; cilia white at tips; the underside pale with the costal and terminal areas thickly irrorated with brown, a dark discoidal point and curved postmedial line.

Hab. U.S.A., Colorado, California, Sanzalito, 1 ♂, 2 ♀ type, Arizona. *Exp.* 34 millim.

1498. **Chabuata mutina.** (Plate LXXXV. fig. 10.)

Apamea mutina, Schaus, Trans. Am. Ent. Soc. xxi. p. 238 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 477.

♀. Head and thorax brown, very thickly irrorated with white; abdomen grey-brown irrorated with grey. Fore wing dull brown, very thickly irrorated with white; faint traces of the antemedial line; reniform absent or represented by an elliptical white mark, its lower part broken up into three small spots; postmedial line very faint, bent outwards below costa, excurved to vein 4, then incurved, faint traces of the subterminal line. Hind wing white, the veins brownish, the marginal areas broadly irrorated and suffused with brown; the underside white irrorated with brown especially on marginal areas, a discoidal point and indistinct curved postmedial line.

♂. Anal tuft mostly ochreous; fore wing with indistinct oblique grey line from costa before apex.

Hab. Mexico, Orizaba, 1 ♂, type † ♀ in Coll. Schaus. *Exp.* 32 millim.

*1499. **Chabuata inconspicua.** (Plate LXXXV. fig. 11.)

Tricholita inconspicua, Grote, Can. Ent. xv. p. 129 (1883); Smith, Cat. Noct. N. Am. p. 173.

♂. Head and thorax ochreous mixed with brown; abdomen

ochreous white irrorated with brown. Fore wing ochreous, suffused and irrorated with dark brown, especially on disk and terminal area; subbasal and antemedial lines, claviform and orbicular obsolete; two white points on discocellulars, with three points below them at lower angle of cell, preceded by a short white streak on end of median nervure; postmedial line indistinct, diffused, excurved from costa to vein 4, then incurved; subterminal line only defined by the area beyond it being slightly darker, angled outwards at vein 7 and excurved at middle. Hind wing whitish irrorated with yellow-brown and the terminal area suffused with yellow-brown; the underside whitish, the costal and terminal areas irrorated with brown, a small discoidal lunule and traces of a sinuous postmedial line.

Hab. U.S.A., Arizona, in U S. Nat. Mus. *Exp.* 36 millim.

Sect II. Antennæ of male serrate and fasciculate.

1500. Chabuata carneago.

Xanthia carneago, Guen. Noct. i. p. 397 (1852).
Xanthia fulva, Blanch. Gay's Fauna Chilena, vii. p. 82, pl. 4. f. 10 (1854).

Head and thorax purplish red more or less tinged with brown, the hairs slightly tipped with white; antennæ whitish; tarsi slightly ringed with white; abdomen purplish red, dorsally tinged

Fig. 53. – *Chabuata carneago*, ♂. ½.

with fuscous, the base pale, the basal crest purple. Fore wing deep red-brown, more or less tinged with purplish grey and irrorated with brown and black; the veins streaked with black; a waved black subbasal line from costa to submedian fold; an oblique minutely waved antemedial line; orbicular represented by a black point; reniform blackish slightly defined by grey and with dark suffusion from it to costa; an oblique waved line from cell to inner margin; postmedial line double, the outer strongest, minutely waved, slightly bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line brown, dilated into a patch on costa, excurved from veins 7 to 2; a waved dark terminal line. Hind wing white, the veins and marginal areas more or less suffused with purplish fuscous; cilia red or ochreous; the underside suffused with red and irrorated with black; a small discoidal spot and curved postmedial series of points on the veins.

Hab. Chili (*Edmonds*), 2 ♂, 1 ♀. *Exp.* 40 millim.

Sect. III. Antennæ of male ciliated.

A. Abdomen of male with paired ventral tufts of long hairs from base.

a. Fore wing yellow irrorated and striated with rufous ..... *distincta.*

b. Fore wing reddish or grey tinged with red, irrorated and striated with brown ..... *obscura.*

c. Fore wing grey tinged with brown; hind wing on underside with the terminal area dark..... *punctosa.*

1501. Chabuata distincta.

Aletia distincta, Moore, P. Z. S. 1881, p. 333, pl. 37, f. 4; Hmpsn. Moths Ind. ii. p. 277.

Aletia exanthemata, Moore, P. Z. S. 1888, p. 410; Butl. Ill. Het. B. M. vii. p. 50, pl. 126. f. 6.

Head and thorax yellow and rufous mixed; a more or less prominent dark line near extremity of tegulæ and some black scales near upper edge of patagia; abdomen ochreous, the ventral tufts of male black. Fore wing yellow, thickly irrorated and striated with rufous; the costal edge fuscous; antemedial line curved and slightly sinuous; claviform absent; orbicular and reniform small, yellow with some rufous scales on them and ill-defined, the former

Fig. 54.—*Chabuata distincta*, ♂. ½.

round, the latter with slight white streak on extremity of median nervure; a rather indistinct and somewhat lunulate postmedial line, slightly angled outwards below costa and incurved at discal fold, incurved below vein 4, a series of points on the veins beyond it, angled at vein 4; an indistinct dark subterminal line, angled outwards at vein 7, inwards in discal fold, and excurved at middle; a terminal series of black points; cilia with fuscous line through them. Hind wing ochreous, more or less suffused with fuscous except towards costa and inner margin; the underside pale, the costal and terminal areas irrorated with fuscous, a small discoidal spot, postmedial waved line or series of short streaks on the veins and terminal series of points; in male the underside of both wings with a golden gloss except costal area of fore wing.

Hab. Punjab, Kulu, Sultanpur (*Young*), 1 ♂, Dharmsála (*Hocking*), 3 ♂, 2 ♀, type *exanthemata*; Sikhim. *Exp.* 38 millim.

1502. Chabuata obscura.

Aletia obscura, Moore, Lep. Atk. p. 97 (1882); Hmpsn. Moths Ind. ii. p. 277.
Aletia rudis, Moore, P. Z. S. 1888, p. 411; Butl. Ill. Het. B. M. vii. p. 50, pl. 126. ff. 7, 8.
Leucania nepos, Leech, Trans. Ent. Soc. 1900, p. 124.

Head and thorax grey, more or less strongly tinged with rufous and irrorated with brown; abdomen ochreous tinged with fuscous, the ventral tufts of male black. Fore wing bright rufous or greyish tinged with rufous, thickly striated with brown and irrorated with black; the median nervure usually with a slight pale streak; a white point at lower angle of cell, usually with some fuscous beyond it; postmedial line represented by a curved series of black points on the veins; subterminal line sometimes obscurely defined by the area beyond it being slightly darker, arising obliquely from termen below apex and excurved at middle; a terminal series of black points. Hind wing fuscous brown, paler towards costa; the cilia ochreous white with a brown line through them. The underside in male with a slight golden gloss except towards costa of fore wing which is tinged with rufous; hind wing with small discoidal spot, traces of a postmedial curved series of short streaks on the veins and a terminal series; of female pale, the costal and terminal areas tinged with purplish and irrorated with black.

Hab. W. China, Omeishan, 1 ♂ type *nepos*; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂, 1 ♀; Simla (*Swinhoe*), 1 ♀, Dharmsála (*Hocking*), 1 ♂, 3 ♀, type *rudis*; Assam, Khásis, 1 ♂ type. *Exp.* 38–44 millim.

1503. Chabuata punctosa. (Plate LXXXVI. fig. 16.)

Cerastis punctosa, Wlk. x. 453 (1856).

♂. Grey mixed with brown; frons with black bar above; tegulæ with traces of medial line; patagia with some black scales above; spurs and tarsal joints towards extremity banded with black; (abdomen wanting). Fore wing grey tinged and irrorated with brown; subbasal line represented by black points on costa and median nervure; antemedial line represented by black points on costa, veins, and inner margin; orbicular and reniform small, pale with some brown suffusion between and beyond them; a postmedial series of black points on the veins; subterminal line only defined by slight brown suffusion beyond it, somewhat waved and excurved at vein 7 and middle; a terminal series of black points; cilia brown with pale tips. Hind wing ochreous white, the terminal half suffused with brown; cilia whitish tinged with brown-pink; the underside whitish irrorated with brown, a discoidal point and postmedial line with the area beyond it suffused with fuscous brown.

Hab. Australia, 1 ♂ type. *Exp.* 36 millim.

B. Abdomen of male without ventral tufts of hair.
a. Fore wing with the cilia not crenulate.
*a*¹. Fore wing with the ground-colour yellow to rufous.
*a*². Fore wing with the antemedial line angled outwards in submedian fold.
*a*³. Fore wing with prominent white spot or short streak at lower angle of cell ..... *conigera.*
*b*³. Fore wing with the mark at lower angle of cell absent or yellowish.
*a*⁴. Fore wing with the orbicular and reniform yellow ..... *angulifera.*
*b*⁴. Fore wing with the orbicular and reniform with pale annuli ..... *velutina.*
*b*². Fore wing with the antemedial line not angled outwards in submedian fold.
*a*³. Fore wing with the costal edge white.
*a*⁴. Fore wing without pale striæ ..... *albicosta.*
*b*⁴. Fore wing with numerous pale striæ ..... *fraterna.*
*b*³. Fore wing with the costal edge not white.
*a*⁴. Fore wing with the veins streaked with white. *inanis.*
*b*⁴. Fore wing with the veins not streaked with white ..... *rufipennis.*
*b*¹. Fore wing with the ground-colour greyish ochreous. *ociosa.*
*c*¹. Fore wing grey-brown to purplish or red-brown.
*a*². Fore wing with the upper part of reniform strongly produced outwards ..... *amœba.*
*b*². Fore wing with the upper part of reniform not produced outwards.
*a*³. Fore wing with the postmedial line dark, evenly sinuous ..... *albimargo.*
*b*³. Fore wing with the postmedial line dark, minutely waved.
*a*⁴. Fore wing without black point on inner side of subterminal line below vein 7.
*a*⁵. Fore wing with the reniform kidney-shaped. *dulcinea.*
*b*⁵. Fore wing with the reniform rather V-shaped ..... *subsocia.*
*b*⁴. Fore wing with black point on inner side of subterminal line below vein 7.
*a*⁵. Fore wing with the reniform white, triangular ..... *albirena.*
*b*⁵. Fore wing with the reniform greyish or ochreous.
*a*⁶. Fore wing with the reniform rather V-shaped, its arms reduced to points..... *ampla.*
*b*⁶. Fore wing with the reniform kidney-shaped..... *major.*
*c*³. Fore wing with the postmedial line pale, nearly straight ..... *rectilinea.*
b. Fore wing with the cilia crenulate.
*a*¹. Fore wing with the reniform large, narrow ..... *noctuiformis.*
*b*¹. Fore wing with the reniform represented by a small ochreous spot..... *satellitioides.*

1504. Chabuata conigera.

Noctua conigera, Schiff. Wien. Verz. p. 84 (1776); Fabr. Mant. Ins. ii. p. 177 (1787); Hübn. Eur. Schmett., Noct. f. 222; Dup. Lép. Fr. vii. p. 60, pl. 104. f. 3; Steph. Ill. Brit. Ent., Haust. ii. p. 151; Staud. Cat. Lep. pal. p. 193.
Noctua floccida, Esp. Schmett. iv. pl. 123. f. 5 (1788).

Head and thorax bright rufous slightly mixed with yellowish; abdomen rufous, pale at base. Fore wing yellowish suffused and thickly irrorated with rufous, the veins darker; subbasal line represented by a dark striga from costa; antemedial line very oblique from costa to submedian fold, where it is angled; orbicular and reniform small, ill-defined, the former round, the latter attenuate below and with a prominent white spot on it more or less angled inwards on median nervure; postmedial line unusually near termen, slightly angled outwards below costa, then oblique and excurved at middle; subterminal line indistinct, dark, arising from termen below apex, angled inwards in discal fold and excurved at middle; a fine terminal line. Hind wing ochreous, more or less strongly suffused with rufous or fuscous; the underside pale ochreous, the costal and terminal areas tinged with rufous, a slight discoidal point and sinuous postmedial line.

Hab. Britain, Forres (*Salvage*), England, Leech Coll.; France; Germany, Zeller and Frey Colls.; N. Italy; Dalmatia; Russia, Livonia, Zeller Coll.; Armenia; Asia Minor, Lydia; C. Asia; Siberia; Japan, Oiwake (*Pryer*), 1 ♂. *Exp.* 36–38 millim.

Larva. Meyr. Brit. Lep. p. 69; Barrett, Lep. Brit. v. p. 171, pl. 205. f. 1.

Ochreous or brownish; dorsal and subdorsal lines pale yellow or greyish edged with black; lateral line pale yellow or greyish, sometimes edged with black; spiracular line blackish; head brownish, marked with black. Food-plant, grasses. 10–5.

1505. Chabuata angulifera. (Plate LXXXV. fig. 12.)

Aletia angulifera, Moore, P. Z. S. 1881, p. 333; Hmpsn. Moths Ind. ii. p. 276.

Head and thorax yellow largely mixed with bright rufous; abdomen yellow, tinged with rufous and irrorated with fuscous. Fore wing yellow, more or less tinged with rufous and irrorated with rufous or brown, the veins darker; subbasal line represented by a dark striga from costa; antemedial line slightly sinuous, very oblique from costa to submedian fold, where it is angled; orbicular and reniform rather small, yellowish, ill-defined, the former round, the latter somewhat attenuate below and more or less angled inwards on median nervure, and sometimes with slight whitish streak on it; postmedial line unusually near termen, slightly angled below costa, then oblique and slightly excurved at middle; subterminal line indistinct, dark, arising from termen below apex, angled inwards in discal fold and excurved at middle; a fine terminal line. Hind wing yellow more or less strongly suffused with fuscous; the underside pale ochreous, the costal area slightly irrorated with rufous, a slight discoidal point and sinuous postmedial line.

Hab. Kashmir, Goorais Valley (*Leech*), 3 ♂, 3 ♀, type. *Exp.* 34–38 millim.

*1506. Chabuata velutina.

Leucania velutina, Smith, Proc. U.S. Nat. Mus. xxii. p. 480 (1900), nec Ev.
Leucania lutina, Smith, Proc. U.S. Nat. Mus. xxv. p. 176 (1092); Dyar, Cat. Lep. N. Am. p. 161.

♀. Head and thorax reddish luteous suffused with red-brown; palpi reddish grey above, deep velvety brown at sides; thorax with the disk carneous; abdomen luteous suffused with carmine-red, dark brown ventrally. Fore wing reddish luteous suffused with red-brown, especially beyond the middle; a diffused purplish streak along vein 1; traces of the subbasal line; antemedial line single, yellowish, somewhat oblique from costa to median nervure, then slightly angled and inwardly oblique; orbicular moderate, rather irregular, with yellowish annulus; reniform well developed, oblique oblong, defined by yellow at sides, ill-defined above and below; an indistinct medial shade from cell to inner margin: postmedial line pale, defined on each side by darker brown, angled outwards below costa, then oblique; subterminal line yellowish, irregular, defined on inner side by some small indistinct dark spots; the terminal area rather paler than ground-colour; cilia rusty red. Hind wing semihyaline, pale tinged with pink, the terminal area suffused with fuscous; cilia fuscous intersected with pink. Underside of fore wing brown tinged with pink, a blackish discoidal spot and postmedial line; hind wing with the costal and apical half of outer areas irrorated with pink, a narrow discoidal spot and interrupted postmedial line.

Hab. U.S.A., Florida. *Exp.* 39 millim. This species is unknown to me.

1507. Chabuata albicosta. (Plate LXXXV. fig. 13.)

Aletia albicosta, Moore, Lep. Atk. p. 97 (1882).
Leucania pallidicosta, Hmpsn. Moths Ind. ii. p. 276 (1894).

Head and thorax bright rufous; some black scales near upper edge of patagia; abdomen brown tinged with purplish red, paler at base. Fore wing bright rufous irrorated with black, and with numerous brown striæ; the costal edge whitish; the veins usually finely streaked with white; a white point at lower angle of cell with more or less fuscous beyond it; orbicular and reniform indistinct, small, ochreous, the former round; postmedial line represented by a curved series of black points on the veins; subterminal line very obscurely defined by the area beyond it being slightly darker, arising obliquely from apex, excurved at middle; cilia whitish at tips. Hind wing pale tinged with fuscous brown, the veins and terminal area suffused with brown; cilia pinkish, whitish at tips. Underside of fore wing with the median nervure and base of veins arising from it streaked with fuscous; hind wing pale, the costal and terminal areas tinged with purplish red and irrorated

with black, a discoidal point, postmedial series of slight streaks on the veins and terminal series of points.

Hab. W. China, Ta-chien-lu (*Pratt*), 1 ♂, Chia-kou-ho (*Pratt*), 1 ♂, 1 ♀; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂, 1 ♀, Simla (*Harford*), 1 ♀, Dharmsála (*Hocking*), 2 ♂, 5 ♀; Sikhim; Ceylon, Pundaloya (*Green*), 1 ♀. *Exp.* 40–48 millim.

1508. Chabuata fraterna.

Aletia fraterna, Moore, P. Z. S. 1888, p. 410; Butl. Ill. Het. B. M. vii. p. 50, pl. 126. f. 9; Hmpsn. Moths Ind. ii. p. 276.

♂. Head and thorax purplish red, the hairs slightly tipped with grey; abdomen purplish red. Fore wing purplish red; the costal edge whitish; the veins finely streaked with whitish; no distinct white point at lower angle of cell; stigmata and postmedial series of points absent. Hind wing pale purplish red slightly tinged with fuscous except towards inner margin; cilia white at tips. Underside of both wings purplish red irrorated with fuscous, a discoidal spot and postmedial spot on costa of fore wing.

Hab. Punjab, Dharmsála (*Hocking*), 1 ♂ type. *Exp.* 46 millim.

*1509. Chabuata inanis.

Leucania inanis, Oberth. Ét. Ent. v. p. 70, pl. iii. f. 4 (1880); Staud. Cat. Lep. pal. p. 193.

♀. Head and thorax grey, tinged with purplish red and mixed with brown; abdomen greyish tinged with purplish brown. Fore wing greyish, suffused with purplish red and irrorated with dark brown; the veins streaked with white; a dark antemedial line oblique from costa to median nervure, then erect and slightly sinuous; a whitish mark on lower discocellulars: postmedial line dark, very minutely waved, bent outwards below costa, excurved to vein 4, then incurved; subterminal line only defined by the area beyond it being very slightly darker, arising from apex, incurved at discal and submedian folds, excurved at middle; a terminal series of black points. Hind wing pale uniformly suffused with brown; cilia pale tinged with purplish pink: the underside grey tinged with purplish pink and irrorated with brown, a discoidal spot and some points on termen.

Hab. E. Siberia, Ussuri, Askold I.; Japan, Nikko in Coll. Püngeler. *Exp.* 40 millim.

1510. Chabuata rufipennis.

Mythimna rufipennis, Butl. A. M. N. H. (5) i. p. 79 (1878); id. Ill. Het. B. M. ii. p. 21, pl. 28. f. 6; Staud. Cat. Lep. pal. p. 194.
Leucania semicircula, Græs. Berl. ent. Zeit. 1888, p. 349.

Head and thorax purplish red mixed with grey; abdomen pale rufous, tinged with purplish red towards extremity and on ventral surface. Fore wing pale rufous, thickly striated with purplish red

and irrorated with black; costal edge fuscous; a more or less prominent fuscous antemedial line obliquely curved from costa to submedian fold, then oblique; faint traces of a yellowish discoidal lunule and of a dark point at lower angle of cell; postmedial line usually distinct, fuscous, with traces of dentitions, oblique from costa to submedian fold, then bent outwards; subterminal line represented by a slight oblique shade from termen below apex. Hind wing fuscous brown with a slight purplish-red tinge, the cilia purplish red. Underside purplish red irrorated with black; fore wing with the disk suffused with fuscous leaving a yellowish discal bar, a straight dark postmedial line; hind wing with the inner area pale yellow, a discoidal point.

Hab. Amurland, Ussuri, 1 ♂; Japan, Yokohama (*Jonas*, *Manley*), 2 ♀ type, Oiwake (*Pryer*), 3 ♂, 3 ♀; Corea, Gensan (*Leech*), 1 ♀. *Exp.* 30–44 millim.

*1511. **Chabuata ociosa.** (Plate LXXXV. fig. 14.)

Celæna ociosa, Dogn. Ann. Soc. Ent. Belge, xli. p. 410 (1897).

♂. Head and thorax yellowish brown mixed with fuscous; abdomen greyish ochreous irrorated with black especially on dorsum. Fore wing greyish ochreous with a slight rufous tinge and irrorated with black; a double curved blackish subbasal line from costa to submedian fold; a double, waved, antemedial line; claviform small, defined by black; orbicular round, defined by black; reniform a narrow black-edged lunule, its inner edge somewhat thickened at middle and with a white spot beyond it, with small spots above and below it, each edged with black; the postmedial line double, minutely waved and with a series of points beyond it on the veins, strongly bent outwards below costa, incurved below vein 4; some ochreous points on apical part of costa; the subterminal line greyish, defined by black points on each side of it, slightly angled outwards at vein 7 and excurved at middle, the area beyond it rather darker. Hind wing pale, the veins and terminal half suffused with fuscous brown; the underside irrorated with brown, a small black discoidal spot and sinuous postmedial line.

Hab. Ecuador, Loja, type † ♂ in Coll. Dognin. *Exp.* 24 millim.

1512. **Chabuata amœba**, n. sp. (Plate LXXXV. fig. 15.)

♀. Head and thorax clothed with pale and black-brown hair; abdomen ochreous brown. Fore wing grey irrorated with fuscous; subbasal line waved, from costa to submedian fold; antemedial line irregularly waved; claviform represented by a short black streak; orbicular and reniform with brownish centres and white annuli defined by black, the former rounded, the latter with its upper part produced to a long point and its lower slightly angled inwards on median nervure, situated on a large diffused black patch

extending to below cell and to costa near apex; an oblique waved medial line from cell to inner margin; postmedial line rather indistinct, strongly dentate, bent outwards below costa and oblique below vein 4; subterminal line whitish defined by fuscous on inner side, angled outwards at vein 7 and slightly dentate at veins 4, 3; a terminal series of black points. Hind wing fuscous; the underside with traces of curved postmedial line.

Hab. Br. E. Africa, Ngonini, 1 ♀, Eb Urru (*Betton*), 3 ♀ type. *Exp.* 34 millim.

*1513. **Chabuata albimargo.** (Plate XC. fig. 2.)

Orthodes albimargo, Guen. Noct. i. p. 373 (1852).

♂. Head and thorax red-brown mixed with grey; abdomen grey-brown, the anal tuft rufous. Fore wing grey, suffused with red-brown and thickly irrorated with dark brown, the inner margin narrowly white from antemedial line to tornus; subbasal line indistinct, curved, from cesta to submedian fold, a small black spot beyond it in cell; antemedial line defined by whitish on inner side, curved; claviform absent; orbicular and reniform large, brown with whitish annuli slightly defined by brown; a fuscous medial line oblique from costa to lower angle of cell where it is angled; postmedial line double, filled in with greyish, the outer line most prominent, bent outwards below costa, excurved to vein 5, then incurved, a series of dark points beyond it on the veins; subterminal line ochreous defined by red-brown on inner side, slightly angled outwards at vein 7 and excurved at middle; the veins of terminal area with fine pale streaks; a series of dark points just before termen, a fine waved dark terminal line. Hind wing fuscous brown, the cilia ochreous whitish; the underside pale, thickly irrorated with brown, a small discoidal lunule and sinuous postmedial line.

Hab. Brazil, type † ♂ in Coll. Oberthür. *Exp.* 44 millim.

1514. **Chabuata dulcinea.** (Plate LXXXV. fig. 16.)

Caradrina dulcinea, Butl. Trans. Ent. Soc. 1882, p. 125.

Head and thorax pale red-brown, some of the hairs tipped with white; palpi tinged with fuscous at sides; abdomen pale red-brown, sometimes tinged with purplish. Fore wing pale red-brown slightly suffused with purple; a small white-tipped black tuft of hair at base; an indistinct pale waved subbasal line from costa to submedian fold; antemedial line double, filled in with greyish, angled outwards below costa, then waved, oblique, bent inwards to inner margin; orbicular and reniform well developed, with yellowish or whitish annuli, the former round, the latter with its lower part filled in with black; a diffused medial line oblique from costa to median nervure; postmedial line double, minutely dentate and produced to black and white points on the veins, bent outwards

below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line ochreous defined by red-brown on inner side, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing fuscous brown; the cilia rufous; the underside pale suffused with purplish red and irrorated with white and fuscous, a more or less developed black streak in cell, prominent discoidal spot and minutely waved postmedial line.

Hab. Chili (*Edmonds*), 1 ♂, 1 ♀ type, Mulchen (*Elwes*), 1 ♂. *Exp.* 36 millim.

*1515. Chabuata subsocia. (Plate LXXXV. fig. 17.)

Tæniocampa subsocia, Wlk. x. 430 (1856).

♂. Head and thorax pale grey-brown; palpi and frons black at sides; tegulæ rufous at tips; thoracic crest tipped with rufous; tarsi blackish with pale rings; abdomen fuscous, the anal tuft pale brownish, the ventral surface ochreous-white tinged with pink. Fore wing pale grey-brown with some dark brown irroration; an indistinct double, waved, subbasal line from costa to submedian fold; some brown on inner margin before the indistinct, double, waved antemedial line, excurved in submedian interspace, with a black spot on its inner edge on vein 1 and a brown spot before it below vein 1; reniform narrow, its edges nearly parallel, open above, with pale annulus and its centre defined by brown, a black point in its lower portion; postmedial line ill-defined, double, dentate and produced to black points on the veins; subterminal line pale, defined on inner side by fuscous on costal area, angled outwards at vein 7, then defined on each side by brown, excurved at middle and with black spot on its outer side above inner margin; a terminal series of small blackish lunules. Hind wing fuscous brown, the cilia ochreous; the underside pale brownish irrorated with dark brown, a black discoidal spot and sinuous postmedial line with dark striæ at the veins.

Hab. Brazil, Petropolis. *Exp.* 44 millim. Type † ♂ in Mus. Oxon.

*1516. Chabuata albirena. (Plate LXXXV. fig. 18.)

Noctua albirena, Guen. Noct. i. p. 335 (1852).

♀. Head and thorax purplish red-brown; abdomen grey-brown, the ventral surface tinged with ochreous. Fore wing purplish red-brown; subbasal line indistinct, almost straight, from costa to vein 1; a dark shade before the antemedial line, which is indistinct and waved; a patch of brown suffusion in, below, and beyond end of cell, with the large triangular white reniform spot placed on it; a slight diffused line from lower angle of cell to inner margin; postmedial line minutely waved, strongly bent outwards below costa, excurved to vein 4, then incurved, some

white points beyond it on costa; the subterminal line represented by a series of white points, angled outwards at vein 7 and excurved at middle, with a small dentate black spot before the point above vein 5; a fine pale line at base of cilia, which are pinkish. Hind wing ochreous brown, paler towards base and inner margin; cilia pinkish; underside pale, the costal and terminal areas suffused with pinkish brown, a slight discoidal point and sinuous postmedial line.

Hab. Brazil, New Fribourg, type † in Coll. Oberthür. *Exp.* 44 millim.

*1517. Chabuata ampla. (Plate LXXXV. fig. 19.)

Chabuata ampla, Wlk. xiv. 1034 (1857).

♀. Head and thorax fuscous brown, the scales tipped with grey; abdomen grey-brown with a slight ochreous tinge. Fore wing fuscous brown suffused with silvery grey; faint traces of a curved antemedial line; orbicular hardly visible, round, with a deep red point on its upper edge; reniform an ochreous spot with points above and below it and some deep red on its edges; an indistinct dark medial line oblique from costa to lower angle of cell; postmedial line represented by a faint double curved series of dark points; subterminal line only represented by some red scales and a spot above vein 6; a slight series of points just before termen. Hind wing fuscous; the cilia ochreous white; the underside ochreous white thickly irrorated with brown, a discoidal point and sinuous punctiform postmedial line.

Hab. Brazil, type † ♀ in Mus. Oxon. *Exp.* 54 millim.

1518. Chabuata major.

Noctua major, Guen. Noct. i. p. 334 (1852).
Graphiphora maja, Wlk. x. 401 (1856).

Head and thorax dull red-brown, deep red-brown, purple-brown, or olive-brown, sometimes slightly irrorated with white, and the dorsal crests sometimes pale rufous; spurs ringed with white; abdomen ochreous or grey-brown, the anal tuft rufous. Fore wing red-brown or dull brown suffused with greyish or purplish; an indistinct, double, waved subbasal line from costa to submedian fold; an indistinct double, minutely waved antemedial line, bent inwards to costa and incurved in cell; orbicular round with very indistinct grey annulus, sometimes with grey points at sides; reniform with obscure grey annulus, sometimes with four white points on its edges, the outer part of centre with grey or olive lunule; medial shade usually distinct, oblique from costa to median nervure; postmedial line more or less distinctly double, dentate and with series of black points on outer line, excurved from costa to vein 4, then incurved, some white points beyond it on costa; subterminal line indistinct, pale, angled outwards at vein 7 and

with small black spot in its angle, excurved at middle and sometimes with some small grey and black dentate marks on its inner side; a series of black or black and white points just before termen; cilia rufous or with rufous line at base. Hind wing

Fig. 55.—*Chabuata major*, ♂. ½.

fuscous brown with an ochreous tinge; cilia ochreous; the underside ochreous, the costal area tinged with reddish brown; a dark discoidal spot and sinuous postmedial line.

Hab. Brazil, New Fribourg, type † ♂ in Coll. Oberthür, Rio Janeiro, 1 ♂, 2 ♀; Paraguay, Sapucay (*Foster*), 2 ♂, 1 ♀; Argentina, Goya (*Perrins*), 1 ♂, 1 ♀. *Exp.* 50–56 millim.

1519. **Chabuata rectilinea**, n. sp. (Plate LXXXV. fig. 20.)

♀. Head and thorax reddish brown, some of the scales tipped with grey, the dorsal crest redder; antennæ with the shaft whitish towards base; pectus rufous; the legs browner irrorated with white; abdomen pale brown, the anal tuft and ventral surface rufous. Fore wing dull reddish brown thickly irrorated with brownish ochreous; a small black tuft at base; no trace of subbasal line; antemedial line fuscous defined by ochreous on inner side, slightly sinuous, oblique from costa to median nervure; orbicular and reniform finely defined by ochreous, the former round, the latter large, its upper part somewhat produced and its outer part filled in with ochreous; traces of a medial shade oblique from costa to median nervure; postmedial line ochreous, bent inwards to costa, then oblique and slightly incurved towards inner margin, a series of black points beyond it on veins 6 to 1; the postmedial area slightly tinged with purplish; the subterminal line ochreous, slightly angled outwards at vein 7, above and below which there are black spots on its inner side, slightly angled inwards at discal fold, then excurved and with some black points on its inner side, the area beyond it thickly irrorated with ochreous; a series of black points just before termen. Hind wing fuscous brown; the cilia pale rufous; the underside ochreous whitish tinged with purplish red and irrorated with brown, a small discoidal spot and sinuous postmedial line.

Hab. Argentina, Goya (*Perrins*), 1 ♀ type. *Exp.* 48 millim.

*1520. Chabuata noctuiformis. (Plate XC. fig. 3.)

Orthodes noctuiformis, Guen. ined.

♀. Head and thorax reddish brown tinged with purplish brown; abdomen ochreous, dorsally suffused with fuscous, the basal crest grey-tipped. Fore wing pale purplish brown, thickly irrorated with fuscous; a double, waved, subbasal line from costa to submedian fold; antemedial line double, the inner obliquely curved, the outer irregularly waved, indistinct; claviform absent; orbicular round, hardly defined except by an ochreous annulus above; reniform narrow, oblique, ochreous white, the centre defined by brown and with a black point in its lower part; a medial line oblique from costa to lower angle of cell where it is angled; postmedial line indistinct, double, the inner line minutely dentate and with series of black and grey points on it, bent outwards below costa and oblique below vein 4, the area beyond it slightly darker to the subterminal line, which is very indistinct, pale, with a prominent black spot on it below vein 7 and slight points at middle, angled outwards at vein 7 and excurved at middle; a series of slight points just before termen connected by a fine waved line; cilia crenulate. Hind wing fuscous brown, the cilia ochreous; the underside grey thickly irrorated with fuscous, a black discoidal spot and slightly sinuous postmedial line.

Hab. Brazil, New Fribourg, type † ♀ in Coll. Oberthür. *Exp.* 60 millim.

*1521. Chabuata satellitioides. (Plate XC. fig. 4.)

Orthodes satellitioides, Guen. Noct. i. p. 372 (1852).

♀. Head and thorax purple-grey; abdomen brown. Fore wing purple-grey; subbasal line absent; two brown well-separated antemedial lines, the inner most prominent and diffused; claviform and orbicular absent; a diffused brown medial shade; reniform represented by a small somewhat quadrate ochreous-white spot; two well-separated postmedial lines, excurved from costa to vein 4, then incurved, the area beyond it tinged with brown to the subterminal line, which is angled outwards at vein 7 and excurved at middle; a series of greyish points just before termen; cilia strongly crenulate. Hind wing reddish brown, a fine pale line at base of cilia; the underside grey strongly irrorated with brown, a small discoidal annulus and sinuous postmedial line.

Hab. Brazil, New Fribourg, type † ♀ in Coll. Oberthür. *Exp.* 50 millim.

Genus **LASIANOBIA**, nov.

Type, *L. lauta*.

Proboscis fully developed; palpi obliquely upturned, fringed with long hair in front; frons smooth; eyes large, rounded, overhung by long cilia; antennæ of male minutely serrate and fasciculate; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; fore tarsi

with rather slender claw- ike spines on 1st joint. Abdomen with dorsal crests on basal segments. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole, 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with white marks on subterminal line at middle and in submedian interspace ..... *lauta.*
B. Fore wing without white marks on subterminal line ..... *decreta.*

*1522. Lasianobia lauta.

Mamestra lauta, Püng. Iris, xiii. p. 119 (1900); Staud. Cat. Lep. pal. p. 254, add.

Head and thorax grey-brown with a reddish tinge; abdomen grey tinged with brown and irrorated with fuscous. Fore wing grey-brown, with a purplish tinge and glossy texture; a slight curved black streak below base of cell; the subbasal line represented by a black point on costa; antemedial line indistinct, with

Fig. 56.—*Lasianobia lauta*, ♂. ½.

an oblique black striga at costa, irregularly dentate, oblique, connected with postmedial line by a black streak on inner margin; claviform small or minute, indistinctly defined by black with some white scales on it; orbicular and reniform moderate, with yellowish-white annuli incompletely defined by black, the former rounded; postmedial line rather indistinct, slightly defined by grey on outer side, with black point at costa and striga at inner margin, dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line indistinct, with yellowish-white marks on it at middle and submedian fold, defined on inner side by rufous suffusion and small dentate dark marks at middle and submedian fold, angled outwards at vein 7 and excurved at middle; traces of some terminal black lunules sometimes present; cilia brown with a grey line through them. Hind wing grey nearly uniformly suffused with brown; the cilia brownish white; the underside brownish white irrorated with fuscous, a black streak in cell, discoidal lunule and sinuous postmedial line with dark streaks at the veins.

Hab. Tibet. Kuku-noor, type † in Coll. Püngeler. *Exp.* 42 millim.

T 2

*1523. Lasianobia decreta. (Plate LXXXV. fig. 21.)

Mamestra decreta, Püng. Iris, xii. p. 292, pl. 9. f. 7 (1900); Staud. Cat. Lep. pal. p. 159.

♂. Head, thorax, and abdomen grey mixed with red-brown; tarsi with pale rings. Fore wing grey tinged and irrorated with brown, the area in, below, and beyond cell from antemedial to subterminal line suffused with rufous; a black streak below base of cell; antemedial line waved, strongly angled inwards in cell; claviform minute, greyish defined by black; the median nervure and veins arising from it streaked with grey on medial area; orbicular and reniform grey defined by black, the former oblique elliptical, with smaller spot below it on base of vein 2, the latter oblique and with its lower extremity produced; postmedial line rather indistinct and somewhat dentate, bent outwards below costa, obliquely excurved to vein 4, then oblique, some pale points beyond it on costa; subterminal line indistinct, pale, angled outwards on vein 7 and slightly dentate on veins 4, 3; a fine terminal black line. Hind wing grey uniformly suffused with fuscous brown; the cilia pale; the underside grey irrorated with fuscous, a discoidal spot, sinuous postmedial line, and some dark striæ on termen.

♀ less tinged with rufous, some fuscous suffusion beyond lower extremity of reniform.

Hab. Tibet, Kuku-noor, type † in Coll. Püngeler. *Exp.* 36 millim.

Genus MANOBIA.

	Type.
Manobia, Staud. Iris, viii. p. 317 (1895)	*xena*.

Proboscis fully developed; palpi upturned, fringed with hair in front; frons smooth, rounded; eyes large, rounded; antennæ of male minutely serrate; head and thorax clothed entirely with hair and hair-like scales; the pro- and metathorax with spreading crests; fore tarsi with curved claws on outer side of one or more joints; abdomen with dorsal crest on basal segment only. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with wedge-shaped dark patch below base of cell, the medial area suffused with rufous ..... *xena*.
B. Fore wing without wedge-shaped dark patch below base of cell, the medial area not suffused with rufous ..... *grisea*.

1524. Manobia xena.

Manobia xena, Staud. Iris, viii. p. 317, pl. 6. f. 8 (1895); id. Cat. Lep. pal. p. 161.

♂. Head and thorax red-brown mixed with purplish grey; abdomen greyish brown, the dorsal crest and anal tuft rufous.

Fore wing rufous suffused with purplish grey, leaving the area in and beyond end of cell and the medial area below submedian fold rufous; subbasal line waved, from costa to submedian fold; a wedge-shaped dark brown streak below base of cell; antemedial line defined by grey on inner side, angled outwards below costa, oblique to vein 1, and bent inwards to inner margin; claviform small, very indistinctly defined by brown; orbicular and reniform with brownish centres and grey annuli defined by brown, the former

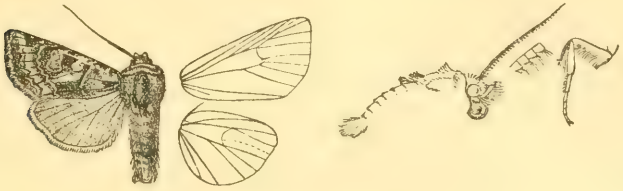


Fig. 57.—*Manobia xena*, ♂. ½.

round, the latter slightly angled inwards on median nervure; postmedial line double, filled in with grey, minutely waved, slightly bent outwards below costa, excurved to vein 4, then oblique; subterminal line grey defined by brown on each side and with a brown patch with pale points on it before it on costa, minutely waved, angled outwards at vein 7 and dentate at veins 4, 3; a fine waved terminal line. Hind wing pale brown, the veins and a fine terminal line darker; cilia brownish white; the underside pale pinkish irrorated with brown, a discoidal lunule and curved postmedial line.

Fore tarsi with curved claws on outer side of 1st joint.

Hab. Tibet, Kuku-noor, 1 ♂, Amdo. *Exp.* 40 millim.

1525. **Manobia grisea.** (Plate LXXXV. fig. 22.)

Alyssia grisea, Butl. A. M. N. H. (5) i. p. 82 (1878).

♂. Head and thorax reddish brown, some of the scales tipped with grey; abdomen pale ochreous brown. Fore wing ochreous brown tinged with greyish; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line indistinct, double, waved, oblique; orbicular and reniform very indistinct, pale; an indistinct curved medial shade; postmedial line indistinct, double, waved, bent outwards below costa and incurved below vein 4, some whitish points beyond it on costa; the terminal area rather darker, with traces of subterminal line angled outwards at vein 7 and slightly excurved at middle; a terminal lunulate line. Hind wing brownish ochreous, the terminal area rather darker; the underside with indistinct, diffused, subterminal band.

Hab. Japan, Yokohama (*Jonas*), 1 ♂ type. *Exp.* 54 millim.

Genus HYSSIA.

	Type.
Hyssia, Guen. Noct. i. p. 345 (1852)	*cavernosa.*
Alysia, Guen. Ent. Mo. Mag. v. p. 3 (1868)	*nullifera.*
Ulolonche, Smith, Pr. U.S. Nat. Mus. x. p. 471 (1887)	*niveiguttata.*

Proboscis fully developed; palpi upturned, the 2nd joint fringed with hair in front, the 3rd short with small tuft of hair in front; frons smooth; eyes large, rounded; antennæ typically minutely ciliated; head and thorax roughly clothed with scales mixed with some hair, the pro- and metathorax with spreading crests; tibiæ fringed with long hair; abdomen with dorsal crest on 1st segment, some rough hair at base and lateral tufts of hair. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. (*Alysia*). Antennæ of male serrate and fasciculate.

A. Fore wing with the ground-colour greenish grey.
- *a.* Fore wing with series of yellow points on the lines ... *griseipennis.*
- *b.* Fore wing without series of yellow points on the lines... *inconstans.*

B. Fore wing with the ground-colour grey-brown.
- *a.* Fore wing without black streak from claviform to post-medial line.
  - a^1. Fore wing with the terminal area not paler than ground-colour.
    - a^2. Fore wing with the lines distinct.
      - a^3. Fore wing largely suffused with grey; hind wing with the cilia pale.
        - a^4. Fore wing with the ground-colour pale reddish brown ..... *cucullina.*
        - b^4. Fore wing with the ground-colour fuscous brown ..... *moderata.*
      - b^3. Fore wing slightly irrorated with grey; hind wing with the cilia brown with pale tips ..... *sminthistis.*
    - b^2. Fore wing with the lines almost obsolete..... *nullifera.*
  - b^1. Fore wing with the terminal area paler than the ground-colour ..... *senatoria.*
- *b.* Fore wing with black streak from claviform to post-medial line..... *gussata.*

1526. Hyssia griseipennis.

Mamestra griseipennis, Feld. Reis. Nov. pl. 109. f. 22 (1874); Hudson, N. Zealand Moths & Butterflies, p. 9, pl. iv. f. 8.
Chera virescens, Butl. Cist. Ent. ii. p. 489 (1879).

♀. Head and thorax olive-brown slightly irrorated with white; tarsi with pale rings; abdomen grey-brown. Fore wing grey-green irrorated with white; subbasal line double at costa, waved, ending in an ochreous mark above vein 1; a slight ochreous streak above inner margin near base; antemedial line indistinct, double, waved, angled inwards on median nervure and vein 1, with some ochreous on it; the stigmata defined by black and with some ochreous scales on them; the claviform small, the orbicular round, open above; an indistinct dentate medial line angled outwards at middle; post-medial line defined by ochreous on outer side, dentate and produced

to black and white points on the veins, bent outwards below costa, excurved to vein 4, then incurved; subterminal line ochreous defined on inner side by an obscure series of dentate fuscous marks, angled outwards at vein 7, excurved at middle, and angled inwards in submedian fold: cilia ochreous and grey. Hind wing fuscous brown; the cilia ochreous, pale at tips; the underside pale fuscous irrorated and suffused with white, a slight discoidal lunule and curved postmedial line.

Hab. New Zealand, N. Island, Wellington, S. Island, Nelson Province, Mt. Arthur, Otago (*Hutton*), 1 ♀ type *virescens*. *Exp.* 50 millim.

1527. Hyssia inconstans. (Plate LXXXV. fig. 23.)

Spælotis inconstans, Butl. Cist. Ent. ii. p. 545 (1880).

Head and thorax grey and brown mixed; abdomen greyish brown. Fore wing grey with a very slight orange tinge and black irroration; subbasal line represented by double striæ from costa and cell; antemedial line very indistinct, double, waved, oblique; orbicular and reniform defined by black, the former round, open above and below, the latter open above; postmedial line rather indistinct, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line represented by a series of grey and black dentate marks, slightly angled outwards at vein 7, excurved at middle, and angled inwards in submedian fold; a terminal series of black points: cilia brownish. Hind wing fuscous brown, the cilia pale; the underside grey-white with slight discoidal lunule and traces of curved postmedial line.

Hab. New Zealand, Marlborough (*Skellon*), 1 ♀ type, (*J. J. Walker*) 1 ♂. *Exp.* 40 millim.

1528. Hyssia cucullina. (Plate LXXX. fig. 27.)

Xylocampa cucullina, Guen. Ent. Mo. Mag. v. p. 40 (1868); Hudson, New Zealand Moths & Butterflies, p. 27, pl. v. f. 23.

♂. Head, thorax, and abdomen grey mixed with brown; tarsi with pale rings. Fore wing ochreous grey irrorated and suffused with brown; subbasal line double filled in with grey, waved, from costa to vein 1; antemedial line double filled in with grey, waved; claviform very small, slightly defined by black; orbicular and reniform moderate, with greyish annuli incompletely defined by black, the former round; traces of a diffused waved medial line; postmedial line indistinctly double filled in with grey, dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line ochreous whitish, irregular, angled outwards at vein 7 and somewhat dentate at veins 4, 3; a terminal series of black points. Hind wing fuscous brown, the cilia pale with a brown line through them; the underside whitish strongly

irrorated with fuscous, a slight discoidal lunule and curved postmedial line.

Hab. New Zealand (*Enys*, *Mathew*), 3 ♂, Mt. Arthur, Rakaia. *Exp.* 40 millim.

1529. Hyssia moderata.

Agrotis moderata, Wlk. xxxii. 705 (1865); Hudson, New Zealand Moths & Butterflies, p. 9.
Eumichtis sistens, Guen. Ent. Mo. Mag. v. p. 39 (1868).
Agrotis mitis, Butl. P. Z. S. 1877, p. 383, pl. 42. f. 5.

Head and thorax grey mixed with brown; abdomen brownish grey. Fore wing brownish grey thickly irrorated with fuscous; subbasal line represented by black striæ from costa and cell slightly defined by grey on outer side; antemedial line indistinct, double, filled in with grey, irregularly dentate; claviform obsolete or small and slightly defined by fuscous; orbicular and reniform with greyish annuli defined by fuscous, the former round or somewhat elongate elliptical; a medial shade oblique towards costa and somewhat dentate below the cell; postmedial line slightly defined by grey on

Fig. 58.—*Hyssia moderata*, ♂. ½.

outer side, dentate, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line formed by a series of small grey and fuscous dentate marks angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing fuscous brown, the basal half paler in male; cilia white, yellowish or brownish at base; the underside grey-white with slight discoidal lunule, curved postmedial line, and diffused terminal band.

Ab. 1. *mitis*. Much greyer; fore wing with the markings indistinct except the medial shade.

Hab. New Zealand (*J. J. Walker*), 3 ♂, Auckland (*Oxley*), 1 ♂, 1 ♀ type, (*Enys*) 3 ♂ type *mitis*, Otago (*Hutton*) 1 ♂ 1 ♀, (*Mathew*) 2 ♂, 2 ♀, Dunedin (*Purdie*) 1 ♂. *Exp.* 36–40 millim.

1530. Hyssia sminthistis, n. sp. (Plate LXXXVI. fig. 17.)

♂. Head and thorax dark brown slightly irrorated with grey; abdomen brown. Fore wing dark brown slightly irrorated with grey; traces of a waved subbasal line from costa to submedian fold; antemedial line indistinct, double, waved, angled inwards on vein 1; claviform absent; orbicular and reniform small, indistinct,

with obscure grey annuli; postmedial line very indistinct, double, minutely waved, bent outwards below costa, excurved to vein 4, then incurved; subterminal line very indistinct, whitish, interrupted, excurved slightly at vein 7 and middle; a terminal series of black points. Hind wing dark brown; cilia brown with fine pale line at base and whitish tips; the underside whitish irrorated with brown, a small discoidal spot and traces of a curved postmedial line.

Hab. NEW ZEALAND (*Matthew*), 1 ♂ type. *Exp.* 38 millim.

1531. Hyssia nullifera.

Agrotis nullifera, Wlk. xi. 742 (1857); Butl. Voy. Erebus & Terror, pl. ix. f. 5; Hudson's New Zealand Moths & Butterflies, p. 9, pl. iv. f. 9 and pl. ii. f. 11.
Alysia specifica, Guen. Ent. Mo. Mag. v. p. 3 (1868).

Head and thorax grey and pale reddish brown mixed; abdomen pale ochreous brown. Fore wing pale grey-brown with a reddish tinge; traces of a postmedial line dentate and produced to rather

Fig. 59.—*Hyssia nullifera*, ♂. ½.

more distinct points on the veins, bent outwards below costa, excurved to vein 4, then incurved; traces of a curved subterminal series of white points in the interspaces. Hind wing pale brown with a slight ochreous tinge.

Hab. NEW ZEALAND (*Earl*), 1 ♂ type, (*Matthew*) 1 ♀, (*J. J. Walker*) 1 ♀, N. Island, Taupo, Wellington, S. Island, Mount Arthur, Christchurch, Rakaia. *Exp.* 62 millim.

Larva stout, bright yellowish brown, much paler below and thickly irrorated with white; dorsal line slight; subdorsal and lateral lines dull brown with a series of elongate white spots below each; spiracles and dorsal surface of posterior somites black. Food-plant, *Aciphylla squarrosa*, one larva feeding in centre of each tussock. 5.

*1532. Hyssia senatoria. (Plate LXXXV. fig. 24.)

Mamestra senatoria, Smith, Proc. U.S. Nat. Mus. xxii. p. 461 (1900); Dyar, Cat. Lep. N. Am. p. 156.

♂. Head and thorax clothed with dark brown and greyish hair

and scales; tarsi with pale rings; abdomen ochreous brown, the ventral surface dark brown mixed with ochreous. Fore wing grey-brown, almost entirely suffused with fuscous but leaving the terminal area prominently paler; subbasal and antemedial lines double filled in with pale colour, waved, the former from costa to vein 1, the latter rather oblique; claviform minute, incompletely defined by black; orbicular and reniform defined by black, the former round, the latter whitish with some brown in centre and slightly concave towards base; medial line minutely waved, angled at median nervure; postmedial line double, minutely dentate, bent outwards below costa and incurved below vein 4, some pale points on costa beyond it; subterminal line pale, defined on inner side by a series of dentate black marks, angled outwards at vein 7 and excurved at middle, the pale area beyond it traversed by obscure black streaks above and below vein 5; a terminal series of small black lunules; cilia blackish intersected with greyish. Hind wing fuscous brown, the basal area paler; cilia ochreous white with a dark line through them; the underside pale tinged with ochreous and irrorated with fuscous, a small discoidal spot and sinuous post-medial line.

Hab. U.S.A., Arizona, in U.S. Nat. Mus. *Exp.* 34 millim.

1533. Hyssia gussata. (Plate LXXXV. fig. 25.)

Mamestra gussata, Smith, Ent. News Philad. vi. p. 337, pl. xv. f. 9 (1895); Dyar, Cat. Lep. N. Am. p. 152.

♂. Head and thorax grey mixed with brown, some black scales near upper edge of patagia; tarsi fuscous ringed with white; abdomen ochreous brown, the dorsal crest grey and brown, the ventral surface grey irrorated with brown. Fore wing brownish grey irrorated and suffused with purplish fuscous; subbasal line represented by double striæ from costa and cell, the latter with curved black mark on inner side running to base; the antemedial line black defined by whitish on inner side, angled outwards and interrupted below costa, oblique to submedian fold, then angled inwards on vein 1; claviform small, defined by black and connected by a black streak with postmedial line; orbicular and reniform large, incompletely defined by black, the former oblique elliptical, the latter with some fuscous in its lower part; traces of a curved medial shade; postmedial line indistinctly double, somewhat dentate and produced to grey and black streaks on the veins, bent outwards below costa, incurved below vein 4; subterminal line indistinct, pale, with traces of minute dentate black marks on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of slight black lunules. Hind wing whitish thickly irrorated with brown, a terminal series of dark striæ; cilia white; the underside with black discoidal lunule and indistinct curved post-medial line.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 1 ♂. *Exp.* 42 millim.

Sect. II. Antennæ of male with long bristles and cilia.

A. Head ochreous ..... *compsias.*
B. Head dark.
a. Fore wing with pure white marks on orbicular and reniform ..... *niphadopa.*
b. Fore wing without white marks on stigmata ..... *anthracias.*

1534. Hyssia compsias.

Leucania compsias, Meyr. Fauna Hawaiiensis, i. p. 139 (1899).

♂. Head, thorax, and abdomen pale greyish ochreous; palpi and antennæ blackish; legs tinged with black; abdomen tinged with fuscous towards extremity. Fore wing grey-white tinged with ochreous, irrorated and in parts suffused with fuscous; subbasal line dark, waved, from costa to submedian fold, defined by grey on outer side; some dark brown on costal area before the antemedial line, which is oblique, irregularly waved, defined by grey on inner side: claviform absent; orbicular small, white defined by black, oblique elliptical; reniform represented by a white bar expanding above and below and defined by black on inner side and two white

Fig. 60.—*Hyssia compsias*, ♂. ½.

points on its outer edge; a broad diffused medial shade, oblique from costa to lower angle of cell; postmedial line minutely dentate, bent outwards below costa and oblique below vein 4, some pale points beyond it on costa; subterminal line whitish defined by fuscous suffusion on inner side, waved, slightly angled outwards at vein 7 and inwards in discal fold, excurved at middle; some dark striæ on termen; cilia ochreous with dark tips. Hind wing grey, tinged with fuscous on the veins and discal area; the underside pale grey, the costal area irrorated with dark brown.

♀. Patagia and thorax fuscous brown irrorated with grey; abdomen grey-brown; fore wing dark brown with cupreous reflections, the lines defined by pure white, reniform with elongate pure white spot above median nervure from it to orbicular; hind wing more strongly suffused with fuscous brown.

Hab. Hawaii, Kilauea (*Perkins*), 1 ♂ type, Olaa, 1 ♀. *Exp.* 36 millim.

1535. Hyssia niphadopa. (Plate LXXXV. fig. 26.)

Leucania niphadopa, Meyr. Fauna Hawaiiensis, i. p. 140 (1899).

♀. Head and thorax dark brown with a purplish tinge; tarsi

with pale rings; abdomen fuscous brown, greyish at base, the anal tuft with a rufous tinge. Fore wing fuscous brown with a slight purplish gloss; traces of a waved subbasal line from costa to submedian fold; antemedial line indistinct, oblique, retracted to inner margin; claviform absent; orbicular a small round pure white spot; reniform a small round white spot tinged with ochreous, defined above, on inner side and below by white marks and forming an E-shaped mark; traces of a diffused medial shade; postmedial line indistinct, minutely waved, bent outwards below costa and incurved below vein 4; subterminal line indistinct, dark, slightly angled outwards at vein 7 and excurved at middle. Hind wing fuscous brown; the underside pale grey-brown, the costal area irrorated with grey.

Hab. Hawaii, Olaa, 2000′, 1 ♀ type. *Exp.* 38 millim.

1536. **Hyssia anthracias.** (Plate LXXXV. fig. 27.)

Leucania anthracias, Meyr. Fauna Hawaiiensis, i. p. 139 (1899).

♂. Head and thorax dark brown with a purplish tinge, some of the scales tipped with white; tarsi with pale rings; abdomen fuscous brown, the dorsal crest dark with grey tip, the anal tuft rufous. Fore wing black-brown with a purplish gloss and slightly irrorated with white; subbasal line indistinct, waved, from costa to submedian fold; antemedial line indistinct, double, oblique, waved; claviform minute, defined by black; orbicular and reniform very small, with greyish annuli defined by black, the former round; traces of a medial shade; postmedial line indistinct, dentate and produced to slight white points on the veins, bent outwards below costa, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line represented by a series of small dentate black marks, angled outwards at vein 7 and excurved at middle, with a small ochreous mark beyond them in submedian fold. Hind wing fuscous brown; the underside with the costal area irrorated with whitish.

Hab. Hawaii, Haleokala, 9000′, 1 ♂ type. *Exp.* 40 millim.

Sect. III. (*Hyssia*). Antennæ of male minutely ciliated.
- A. Fore wing with the claviform large, filled in with black-brown ..... *cavernosa.*
- B. Fore wing with the claviform small or obsolete.
  - *a.* Fore wing with the ground-colour grey-brown.
    - a^1. Fore wing tinged with violaceous.
      - a^2. Fore wing without medial line ..... *violascens.*
      - b^2. Fore wing with medial line, the area beyond it rather darker.
        - a^3. Fore wing with the basal half dark purplish grey. *modesta.*
        - b^3. Fore wing with the basal half pale grey.
          - a^4. Fore wing with the medial line not angled inwards in submedian fold ..... *disticha.*
          - b^4. Fore wing with the medial line angled inwards in submedian fold ..... *dilecta.*

b^1. Fore wing not tinged with violaceous.
a^2. Fore wing with the orbicular not connected with the reniform.
a^3. Fore with the reniform rufous ..... *fasciata.*
b^3. Fore wing with the reniform grey with two white points on its lower extremity ..... *niveiguttata.*
b^2. Fore wing with the orbicular connected with the reniform ..... *orbiculata.*
b. Fore wing with the ground-colour grey-white..... *masculina.*

1537. Hyssia cavernosa.

Mamestra cavernosa, Ev. Bull. Mosc. 1842, iii. p. 547, pl. 5. f. 3; Staud. Cat. Lep. pal. p. 159.
Mamestra ornata, Herr.-Schäff. Eur. Schmett., Noct. ff. 46, 47 (1845).

Head and thorax red-brown slightly mixed with grey-white; tegulæ with dark medial line and whitish tips; tarsi with white rings; abdomen ochreous. Fore wing violaceous grey, almost entirely suffused with purple-brown except just before antemedial line and on medial and postmedial areas; an ochreous-white stripe on inner area narrowing to points near base and termen, and with

Fig. 61.—*Hyssia cavernosa*, ♂. ½.

a short black streak above its basal part; subbasal line grey, nearly straight, from costa to submedian fold; antemedial line double, filled in with grey, nearly straight, from costa to vein 1; claviform large, black-brown defined by black; orbicular and reniform black-brown defined by black, the former small, round, the latter large, with black lunule at centre and its lower part dilated; an indistinct medial shade, oblique from costa to vein 2; postmedial line slightly bent outwards below costa, excurved to vein 4, then incurved, some white points beyond on costa; subterminal line white, angled outwards at vein 7 and very slightly excurved at middle, a black bar on its inner side below costa and dentate marks at middle; terminal area brown, with indistinct series of lunules on termen. Hind wing ochreous brown, the cilia pale at tips; the underside whitish tinged with brown, the costal area suffused with reddish brown, traces of a diffused subterminal band.

Hab. Austria; Hungary; Switzerland; Italy; S.E. Russia, 1 ♂; W. Turkestan, Issyk Kul; W. Siberia, Altai; E. Turkestan, Kuldja, 1 ♂; Mongolia, Changai Mts.; E. Siberia, Ussuri. *Exp.* 34 millim.

1538. **Hyssia violascens**, *n.* sp. (Plate LXXXV. fig. 28.)

♀. Head and thorax reddish brown; abdomen paler. Fore wing purplish grey, almost entirely suffused with pale reddish brown to the postmedial line; antemedial line oblique from costa to submedian fold, where it is angled, then angled inwards on vein 1; orbicular and reniform greyish, large, incompletely defined by black scales, the former rather oblique elliptical, the latter with some rufous on it, its outer edge formed by the waved black postmedial line, which is bent outwards below costa and oblique below vein 4, the area beyond it greyer with reddish-brown patch and some pale points on costa and fuscous patches in discal and submedian folds; subterminal line indistinct, grey, waved, angled outwards at vein 7 and slightly excurved at middle, the veins beyond it with slight dark streaks; a terminal series of black lunules. Hind wing ochreous whitish, the veins and apical area tinged with brown; the underside whitish, the costal area tinged with brown, a dark discoidal spot.

Hab. N. China, Foochau (*Leech*), 1 ♀ type. *Exp.* 40 millim.

1539. **Hyssia modesta**. (Plate LXXXV. fig. 29.)

Dianthœcia modesta, Morr. Proc. Bost. Soc. N. H. xvii. p. 114 (1874); Smith, Cat. Noct. N. Am. p. 130.

Head, thorax and abdomen purplish grey mixed with dark brown; palpi blackish at sides. Fore wing purple-grey irrorated with dark brown; the area between the medial and postmedial lines suffused with brown; subbasal line brown, curved, from costa to submedian fold; antemedial line oblique, waved; claviform obsolete; orbicular small, slightly defined by brown; reniform very ill-defined, reddish with some black in its lower part and sometimes a white point on its lower outer side; medial line oblique from costa to lower angle of cell, then slightly angled inwards on submedian fold; postmedial line slightly waved, excurved from costa to vein 6 and incurved below vein 4, and with some pale points beyond it on costa; subterminal line represented by a series of small black-brown spots, angled outwards at vein 7 and excurved at middle and with a dark mark before it at costa. Hind wing fuscous brown; cilia grey at tips; the underside grey thickly irrorated with brown, a discoidal point and curved postmedial line.

Hab. Canada; U.S.A., Middle and Central States, New England, Massachusetts, Newtonville (*Thaxter*), 2 ♀, New York, Evan's Centre, 1 ♂. *Exp.* 28–32 millim.

1540. Hyssia disticha. (Plate LXXXV. fig. 30.)

Caradrina disticha, Morr. Proc. Bost. Soc. N. H. xvii. p. 217 (1874); Smith, Cat. Noct. N. Am. p. 130.

♂. Head and thorax grey slightly mixed with brown; palpi with some black at sides; abdomen ochreous grey irrorated with brown. Fore wing grey sparsely irrorated with brown, the area beyond the medial line suffused with brown; subbasal line almost obsolete; antemedial line indistinct, double, oblique from costa to submedian fold, then angled inwards on vein 1; claviform and orbicular obsolete; reniform yellowish at middle and with grey annulus defined by brown; medial line oblique from costa to lower angle of cell, then more erect; postmedial line double filled in with grey, excurved from costa to vein 5, then incurved; subterminal line hardly traceable, greyish, with a dark brown bar before it from costa, then a point and a few scattered scales, angled outwards at vein 7 and excurved at middle; a terminal series of dark points. Hind wing fuscous brown, the cilia paler; the underside whitish thickly irrorated with brown, a dark discoidal lunule and traces of curved postmedial line.

Hab. U.S.A., Texas, 1 ♂ type. *Exp.* 32 millim.

1541. Hyssia dilecta. (Plate LXXXV. fig. 31.)

Perigea dilecta, H. Edw. Papilio, iv. p. 123 (1884); Smith, Cat. Noct. N. Am. p. 154.

Head and thorax grey mixed with brown and tinged with flesh-colour; tarsi with pale rings; abdomen greyish ochreous irrorated with brown. Fore wing pale grey with a purplish-flesh tinge and slight brown irroration; subbasal and antemedial lines indistinct, waved, the former from costa to submedian fold, the latter oblique; claviform and orbicular absent; medial line oblique from costa to median nervure, then angled inwards in submedian fold, some brownish suffusion beyond it; reniform rufous in male, greyish in female, defined by black and with some white points round its lower half; postmedial line indistinct, bent outwards below costa, excurved to vein 4, then incurved, the costa beyond it fuscous with some pale points on it; subterminal line indistinct, greyish with some slight black points on its inner side, angled outwards at vein 7 and slightly excurved at middle; some slight black points on termen. Hind wing brown with an ochreous tinge, paler towards base; the underside pale, the costal and terminal areas tinged and irrorated with brown, a curved postmedial line.

Hab. U.S.A., Colorado, 1 ♂, Grand Junction (*Oslar*), 3 ♂, 1 ♀, Arizona. *Exp.* 34 millim.

*1542. Hyssia fasciata. (Plate LXXXV. fig. 32.)

Ulolonche fasciata, Smith, Pr. U.S. Nat. Mus. x. p. 471 (1887); id. Cat. Noct. N. Am. p. 130.

♂. Head and thorax bluish grey mixed with fuscous; abdomen ochreous irrorated with fuscous. Fore wing grey tinged with blue and irrorated with fuscous, the area beyond the medial line suffused with fuscous; subbasal line black, curved, from costa to submedian fold; antemedial line ill-defined, oblique from costa to submedian fold, then angled inwards on vein 1 and outwards above inner margin; claviform a rather wedge-shaped black streak extending to the diffused oblique black medial line; orbicular absent; reniform rufous with some black suffusion before and beyond it; postmedial line unusually near termen, represented by some black points, bent outwards below costa, excurved to vein 4, then oblique; subterminal line represented by a series of black points with some rufous scales round them, angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing greyish uniformly suffused with fuscous; the underside grey irrorated with fuscous, a small discoidal spot and curved postmedial line.

Hab. U.S.A., New Mexico, in U.S. Nat. Mus. *Exp.* 32 millim.

1543. Hyssia niveiguttata. (Plate LXXXVI. fig. 18.)

Mamestra niveiguttata, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 140, pl. iv. f. 16 (1873); Smith, Cat. Noct. N. Am. p. 130.

♂. Head, thorax, and abdomen dark brown mixed with grey and some ochreous; tegulæ with black medial line. Fore wing grey irrorated with brown and black; an ochreous tinge in discal and submedian folds and on inner margin; a very obscure black streak below base of cell; an indistinct, waved, subbasal line from costa to submedian fold; antemedial line double, the outer line indistinct, oblique, waved; claviform small, defined by black; orbicular and reniform small, defined by black, the former irregularly rounded, the latter with its lower portion filled in with black and with two white points on its outer lower side; traces of a waved medial line; postmedial line indistinct, sinuous, bent outwards below costa and incurved below vein 4, the area beyond it suffused with fuscous and with some white points on costa; subterminal line somewhat dentate, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules and some whitish points at base of cilia. Hind wing fuscous brown; the cilia pale brown with dark line through them; the underside grey thickly irrorated with dark brown, a discoidal point and curved postmedial line.

Hab. U.S.A., California, 2 ♂ type, (*Stretch*) 1 ♂. *Exp.* 30 millim.

1544. Hyssia orbiculata. (Plate LXXXVI. fig. 19.)

Mamestra orbiculata, Smith, Pr. U.S. Nat. Mus. xiv. p. 266 (1891); id. Cat. Noct. N. Am. p. 131.

♂. Head and thorax grey mixed with reddish brown; abdomen grey irrorated with brown. Fore wing grey thickly irrorated and suffused with dark brown, the area just below and beyond the cell suffused with reddish brown; a sinuous black streak below base of cell; subbasal line represented by a small black spot on costa; antemedial line represented by a black point on costa, then indistinct, angled inwards on median nervure, then double, and very acutely angled inwards on vein 1; claviform rather diffusedly defined by black; orbicular whitish, defined by black at sides, rather triangular and very oblique, open above and below where the white is diffused to below median nervure and connected with the reniform, which is hardly defined except on inner side and below; postmedial line double filled in with white, the inner line prominent, strongly bent outwards below costa, slightly incurved below vein 4 and excurved at vein 1; some white points beyond it on costa: subterminal line whitish, defined on inner side by small dentate black spots, angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing pale, irrorated and the marginal areas suffused with brown; cilia whitish, with a brown line through them; the underside whitish irrorated with brown, a slight discoidal point and curved postmedial line.

Hab. U.S.A., Colorado (*Bruce*), 1 ♂, Glenwood Springs. *Exp.* 28 millim.

1545. Hyssia musculina. (Plate LXXXVI. fig. 20.)

Dianthœcia musculina, Staud. Iris, iv. p. 272 (1891); id. Cat. Lep. pal. p. 162.

♂. Head and thorax ochreous white with a few fuscous hairs; antennæ and tarsi fuscous ringed with white; abdomen ochreous white. Fore wing ochreous white irrorated with fuscous; subbasal line indistinct, waved, from costa to submedian fold; a broad diffused fuscous antemedial band obscuring the antemedial line; claviform absent; orbicular and reniform very ill-defined, ochreous white with very faint yellow annuli, the former rounded; an indistinct waved medial line dilated into a patch on costal area; postmedial line indistinct, dentate, defined by white on outer side towards costa, bent outwards below costa, excurved to vein 4, then incurved, the whole area beyond it suffused with fuscous; subterminal line very indistinct, whitish, angled outwards at vein 7 and excurved at middle; cilia ochreous white chequered with fuscous. Hind wing fuscous, pale at base, the cilia ochreous white; the underside whitish, the costal area irrorated with fuscous, a curved diffused postmedial line, the area beyond it tinged with fuscous.

♀. Head, thorax, and fore wing more bluish white without the ochreous tinge, the last with the medial area darker, the antemedial and terminal areas pale; the orbicular and reniform with fuscous centres and white annuli.

Hab. Kurdistan; Syria, 1 ♂, 1 ♀, Leech Coll. *Exp.* 30–34 millim.

Genus **PROTEINANIA**, nov.

Type, *P. vigasia*.

Proboscis fully developed; palpi oblique, the 2nd joint fringed with hair, the 3rd rather long, porrect; frons smooth; eyes large, rounded; antennæ of male laminate; thorax clothed with hair and scales; tibiæ moderately fringed with hair on outer side; abdomen with dorsal crest on basal segment. Fore wing with the apex rectangular; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base.

A. Fore wing largely suffused with crimson ..... *achatioides.*
B. Fore wing not suffused with crimson ..... *vigasia.*

1546. **Proteinania achatioides.** (Plate LXXXVI. fig. 21.)

Heterochroma achatioides, Guen. Noct. ii. p. 70 (1852).
Dianthœcia eros, Wlk. xv. 1714 (1858).

Head and thorax ochreous suffused with purplish pink; sides of palpi and frons black; tarsi banded with black; abdomen ochreous, dorsally tinged with fuscous. Fore wing pale olive-green (fading to ochreous), some rose-pink at base of costa; pink fasciæ below costa and median nervure and on inner medial area, the two former converging at antemedial line, the 1st expanding to costa at middle, the 2nd expanding beyond end of cell, the 3rd extending from submedian fold to inner margin; the costa towards apex and termen pink; a black subbasal line from costa to above vein 1, where it is connected by a streak with base; antemedial line angled outwards below costa, inwards in cell, then excurved, and at inner margin recurved to vein 1 near base; orbicular and reniform black, their lower extremities connected by a black fascia on median nervure, the former oblique oblong, connected with the costal part of antemedial line; traces of a waved medial line; postmedial line pale greenish, waved, defined on inner side by a few black scales, and on outer by irregular blackish patches from below costa to vein 5, and from vein 5 to inner margin, bent outwards below costa, slightly incurved at discal fold and strongly at submedian fold, some pale and black points beyond it on costa; subterminal line only defined by the contrast between the green and pink areas, slightly angled outwards at vein 7 and excurved at middle; a terminal series of small dark lunules; cilia rufous. Hind wing ochreous suffused with fuscous, rather paler towards base; the underside

ochreous, the costal and terminal areas suffused with rufous and slightly irrorated with brown ; a slight discoidal lunule and sinuous postmedial line.

Hab. Brazil, Petropolis (*Docr*), 1 ♂, Rio Janeiro, 1 ♂, 1 ♀. *Exp.* 28–32 millim.

1547. Proteinania vigasia.

Chloridea vigasia, Schaus, Trans. Am. Ent. Soc. xxi. p. 239 (1894).

♂. Head and thorax ochreous tinged with rufous and irrorated with black; abdomen ochreous white tinged with brown. Fore wing ochreous tinged with rufous and irrorated with black; an indistinct, straight, oblique ochreous subbasal line ; a more distinct similar antemedial line with the elliptical brownish defined by ochreous orbicular stigma on its outer edge; reniform elliptical, brownish defined by ochreous, with an oblique brownish band from

Fig. 62.—*Proteinania vigasia*, ♂. ½.

it to inner margin ; the postmedial line represented by a series of black points on the veins, excurved below costa, then oblique ; the subterminal line ochreous, slightly sinuous and defined by red-brown on its inner side ; a terminal series of black points ; cilia ochreous brown and black. Hind wing pale yellowish, the cilia slightly tinged with rufous.

Hab. Mexico, Las Vigas, 1 ♂, type † ♂ in Coll. Schaus. *Exp.* 28 millim.

Genus ERIOPYGA.

	Type.
Eriopyga, Guen. Noct. i. p. 203 (1852)	*punctula*.
Hypotrix, Guen. Noct. i. p. 369 (1852)	*purpurigera*.
Nasia, Wlk. xv. 1741 (1858)	*mœsta*.
Himella, Grote, Proc. Ac. Nat. Sci. Phil. 1874, p. 200	*intractata*.
Pseudorthodes, Morr. Can. Ent. vi. p. 253 (1874)	*vecors*.

Proboscis fully developed ; palpi with the 2nd joint obliquely upturned, moderately fringed with hair in front, the 3rd moderate or rather long, porrect, frons smooth ; eyes large, rounded ; thorax clothed with hair and scales mixed, without distinct crests ; abdomen without crests. Fore wing rather broad, the termen erect, rounded ; veins 3 and 5 from near angle of cell; 6 from upper angle ; 9 from 10 anastomosing with 8 to form the areole ; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars ; 6, 7 shortly stalked ; 8 anastomosing with the cell to one-third.

Sect. I. Antennæ of male bipectinate.

A. Fore wing with red spot on outer edge of reniform ..... *crocosticta.*
B. Fore wing with ochreous spot on outer edge of reniform.
a. Hind wing fuscous brown ..... *fea.*
b. Hind wing whitish, the terminal area tinged with brown.
a^1. Fore wing very thickly irrorated with grey ..... *mulina.*
b^1. Fore wing very slightly irrorated with white ..... *tersa.*
c. Hind wing pale yellow ..... *baruna.*
C Fore wing without pale spot on reniform.
a. Hind wing with the basal area pale yellow, the terminal area brown ..... *mediorufa.*
b. Hind wing whitish, the terminal area suffused with brown, or wholly suffused with brown.
a^1. Fore wing with the subterminal line dark ..... *contempta.*
b^1. Fore wing with the subterminal line pale.
a^2. Fore wing with more or less prominent dentate dark marks before subterminal line.
a^3. Fore wing tinged with rufous ..... *curtica.*
b^3. Fore wing not tinged with rufous.
a^4. Fore wing with the medial area suffused with fuscous ..... *acalus.*
b^4. Fore wing with the medial area not suffused with fuscous ..... *incincta.*
b^2. Fore wing without dentate dark marks before subterminal line.
a^3. Fore wing with dark shade before subterminal line.
a^4. Fore wing with the stigmata filled in with dark colour.
a^5. Fore wing fuscous brown ..... *perfusca.*
b^5. Fore wing reddish brown ..... *oviduca.*
c^5. Fore wing pale grey-brown ..... *melanopis.*
b^4. Fore wing with the centres of stigmata concolorous.
a^5. Fore wing with subterminal line prominent, minutely waved ..... *orobia.*
b^5. Fore wing with the subterminal line indistinct, sinuous ..... *utahensis.*
b^3. Fore wing with dark shade beyond subterminal line ..... *ochrota.*
c^3. Fore wing with the subterminal line represented by a series of yellowish points ..... *obtusa.*

*1548. Eriopyga crocosticta. (Plate LXXXVI. fig. 22.)

Himella crocosticta, Schaus, J. N.Y. Ent. Soc. xi. p. 232 (1903).

♂. Head and thorax purple-brown, the scales slightly tipped with grey; palpi fuscous brown; pectus, legs, and abdomen dull ochreous brown. Fore wing purple-brown finely irrorated with greyish; traces of a subbasal line from costa to submedian fold; an indistinct, oblique, slightly waved antemedial line; orbicular and reniform small, round, indistinctly defined by fuscous, the latter with orange-red elliptical spot on its outer edge; postmedial line minutely waved, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa, and the veins beyond it streaked with black and irrorated with white; subterminal line formed of conjoined blackish marks, angled outwards at

vein 7 and excurved at middle; a terminal series of slight white streaks on the veins; cilia blackish irrorated with white. Hind wing fuscous brown with an ochreous tinge; the cilia rather paler; the underside whitish irrorated with brown, the costal area suffused with purplish, a small discoidal spot and curved postmedial line.

Hab. Mexico, Orizaba, type † ♂ in Coll. Schaus. *Exp.* 30 millim.

1549. Eriopyga fea.

Meristis fea, Druce, Biol. Centr.-Am., Het. i. p. 279, pl. 27. f. 6 (1889).

Head and thorax dull brown with a yellowish tinge, the hairs tipped with grey; abdomen yellowish brown dorsally tinged with fuscous, the anal tuft of female very large. Fore wing grey-brown with a yellowish tinge; a waved subbasal line from costa to submedian fold; a waved antemedial line; orbicular and reniform large, defined by brown, the former round, the latter with yellow spot with points above and below it on its outer edge; a strong medial line oblique from costa to median nervure, then somewhat incurved; postmedial line minutely waved, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line yellowish white, often broken up into spots, angled outwards at vein 7 and excurved at middle, a terminal series of white points. Hind wing fuscous brown, the cilia pale with a brown line through them; the underside whitish, the costal and terminal areas irrorated with brown, a discoidal spot and sinuous postmedial line.

Hab. Mexico, Jalapa (*Trujillo*, *Hoege*), 1 ♂, 4 ♀, type; Guatemala, Las Mercedes (*Champion*), 2 ♂, 1 ♀, V. de Atitlan (*Champion*), 1 ♀, Godman-Salvin Coll. *Exp.* 36–40 millim.

1550. Eriopyga mulina. (Plate LXXXVI. fig. 23.)

Tæniocampa mulina, Schaus, Trans. Am. Ent. Soc. xxi. p. 237 (1894).

♂. Head and thorax whitish tinged with rufous; abdomen ochreous slightly irrorated with fuscous, the ventral surface ochreous white. Fore wing ochreous slightly tinged with purplish pink; an indistinct excurved blackish subbasal line from costa to submedian fold; an oblique waved antemedial line; orbicular and reniform with their centres slightly irrorated with black and with pale annuli, the former round, the latter rather constricted at middle and with its lower part filled in with black; a fuscous medial line oblique from costa to lower angle of cell, then inwardly oblique to the antemedial line at inner margin; postmedial line dentate and produced to points on the veins, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4; subterminal line pale defined by brown on inner side, angled outwards at vein 7 and excurved at middle. Hind wing whitish tinged with brown, especially on the veins and towards termen; the cilia pinkish

white; the underside ochreous white, the costal and terminal areas irrorated with brown, a small discoidal lunule and postmedial series of slight streaks on the veins.

Hab. Mexico, Orizaba, 1 ♂, type † ♂ in Coll. Schaus. *Exp.* 28 millim.

1551. Eriopyga tersa.

Perigea tersa, Druce, Biol. Centr.-Am., Het. ii. p. 481, pl. 93. f. 26 (1898).

Head and thorax reddish brown, the scales tipped with grey; palpi fuscous at sides; abdomen ochreous brown mixed with grey, tinged with fuscous above in male, the anal tuft ochreous. Fore wing grey-brown, more or less tinged with ochreous and irrorated with white; subbasal line slightly defined by grey on outer side, waved, from costa to submedian fold; antemedial line defined by grey on inner side, oblique, waved; orbicular small, round, with slight ochreous annulus defined by fuscous or almost obsolete; an indistinct diffused medial line excurved at middle; reniform small, round, ochreous, with two white points below it and traces of two ochreous points above it; postmedial line bent outwards below costa, slightly incurved at discal fold, incurved and sinuous below vein 4, with a series of black points beyond it on the veins and some white points on costa; subterminal line represented by a punctiform ochreous-white line with brown shade on its inner side, angled outwards at vein 7 and excurved at middle; a fine dark terminal line with series of white points at the veins. Hind wing white, the veins and marginal areas more or less suffused with ochreous brown; the underside with the costal and terminal areas irrorated with brown, a small discoidal spot and curved postmedial line.

Hab. Guatemala, V. de Atitlan, 3000′ (*Champion*), 1 ♂, 1 ♀ type, Cerro Zunil, 4000′ (*Champion*), 1 ♂, Godman-Salvin Coll. *Exp.* ♂ 30, ♀ 36 millim.

1552. Eriopyga baruna. (Plate LXXXVI. fig. 24.)

Mamestra baruna, Schaus, J. N.Y. Ent. Soc. vi. p. 111 (1898).

♂. Head and thorax deep purplish red, the hairs slightly tipped with grey; palpi at tips and antennæ ochreous; abdomen ochreous with blackish bands, the anal tuft and ventral surface rufous. Fore wing dark purplish red, the veins streaked with black, the terminal area tinged with greyish fuscous; an indistinct waved antemedial line; orbicular minute, elongate elliptical, with white annulus; reniform white, ill-defined and incomplete above and below; postmedial line very indistinct, bent outwards below costa, incurved below vein 4 and angled outwards at vein 1; subterminal line represented by a series of black points in interspaces of costal half, curved inwards to costa; a terminal series of black points. Hind wing pale straw-yellow, the terminal area slightly tinged with fuscous. Underside of fore wing whitish, of hind wing yellow, with the costal area slightly irrorated with fuscous.

♀. Hind wing fuscous brown, the cilia yellowish; underside of fore wing fuscous, of hind wing whitish irrorated with fuscous and suffused on costal area.

Hab. Brazil, Castro Paraña, 1 ♂, type † ♂ ♀ in Coll. Schaus. *Exp.* 44 millim.

1553. Eriopyga mediorufa. (Plate LXXXVI. fig. 25.)

Hizella mediorufa, Schaus, J. N.Y. Ent. Soc. xi. p. 234 (1903).

Head and thorax rufous; abdomen ochreous tinged with fuscous except at base, the anal tuft ochreous tinged with rufous. Fore wing purplish red irrorated with silvery blue, some ochreous at base of inner margin; traces of a waved subbasal line from costa to submedian fold; a double, oblique, waved antemedial line filled in with blue; orbicular and reniform rather small, red-brown with pale silvery-blue annuli, the former rather oblique elliptical, a waved red-brown medial shade passing between them; a double postmedial line bent inwards to costa, the outer line rather diffused; subterminal line indistinct, pale, minutely waved, slightly defined by dark brown on inner side; a fine dark terminal line. Hind wing yellowish white, the terminal area suffused with brown; the underside with the costal area tinged with purplish red.

Hab. Brazil, Castro Paraña, 1 ♀, type † ♂ in Coll. Schaus. *Exp.* 36 millim.

1554. Eriopyga contempta. (Plate LXXXVI. fig. 26.)

Tæniocampa contempta, Schaus, Trans. Am. Ent. Soc. xxi. p. 237 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 484.
Meristis fea, Druce, Biol. Centr.-Am., Het. i. p. 279 (part.).

♂. Head and thorax dull reddish brown strongly irrorated with grey; abdomen fuscous, the ventral surface ochreous irrorated with brown. Fore wing reddish brown thickly irrorated with grey; an indistinct waved subbasal line from costa to submedian fold; a waved antemedial line; claviform represented by a few dark scales at its extremity; orbicular and reniform rather small, flesh-coloured, defined by brown and their centres irrorated with brown, the former round, the latter rather narrow; a medial dark line excurved at middle; postmedial line minutely waved, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line indistinct, pale defined by brown, angled outwards at vein 7 and excurved at middle; a fine pale line at base of cilia. Hind wing yellowish white, the veins and marginal areas tinged with brown; a brown terminal line; the underside with the costal area irrorated with brown, a discoidal lunule and postmedial line on costal area.

♀. Anal tuft large; fore wing darker and more uniformly coloured; the stigmata hardly traceable; hind wing dark brown, the lower part of cell and area below it rather paler.

Hab. Mexico, Orizaba, type † ♂ in Coll. Schaus; Guatemala, Totonicapam, 10,000′ (*Champion*), 1 ♀; Costa Rica, Candalaria Mts. (*Underwood*), 1 ♂, Godman-Salvin Coll. *Exp.* 36–40 millim.

1555. Eriopyga curtica. (Plate LXXXVI. fig. 27.)

Tæniocampa curtica, Smith, Am. Ent. vi. p. 122 (1890); id. Cat. Noct. N. Am. p. 203.

Head and thorax reddish ochreous to red-brown, some of the hairs with pale tips; palpi blackish at sides; abdomen reddish brown dorsally tinged with fuscous. Fore wing reddish ochreous or red-brown, irrorated with white and black scales, the lines indistinct or almost obsolete; subbasal line nearly straight, from costa to submedian fold; antemedial line strongly excurved at costa and inner margin and slightly below the cell; orbicular and reniform with very indistinct whitish annuli, the former oblique elliptical, the latter constricted at middle and with its lower part filled in with fuscous; a more or less distinct medial line oblique from costa to median nervure; postmedial line bent outwards below costa, excurved to vein 4, then incurved, a series of black points beyond it on the veins and some ochreous points on costa; subterminal line whitish defined by fuscous on inner side, forming a series of small indistinct dentate marks, slightly angled outwards at vein 7 and excurved at middle. Hind wing ochreous whitish, the marginal areas more ochreous, the veins and apical area tinged with fuscous; the underside irrorated with large brown scales, especially towards costa, a small discoidal lunule and postmedial series of striæ on the veins.

Hab. U.S.A., Colorado, 1 ♂, California, Sierra Nevada, 1 ♀. *Exp.* 34–38 millim.

1556. Eriopyga acalus. (Plate LXXXVI. fig. 28.)

Orthodes acalus, Streck. Lep. Rhop. & Het. Suppl. 2, p. 6 (1899); Dyar, Cat. Lep. N. Am. p. 165.

♀. Head, thorax, and abdomen reddish brown largely mixed with grey; tarsi with pale rings. Fore wing dull reddish brown thickly irrorated with grey; an indistinct slightly curved subbasal line from costa to submedian fold; an indistinct, irregularly waved, oblique antemedial line defined by grey on inner side; claviform minute, very indistinctly defined by brown; orbicular and reniform indistinctly defined by brown, the former round; a slight medial shade, oblique from costa to median nervure; postmedial line indistinct, bent outwards below costa and incurved below vein 4, some pale points beyond it on costa and an indistinct series of dark points on the veins; subterminal line grey defined by brown on inner side, forming slight dentate dark marks at middle, angled outwards at vein 7 and excurved at middle; a fine grey line at base of cilia. Hind wing pale uniformly suffused with brown;

cilia whitish; the underside whitish irrorated with brown, a small discoidal spot and curved postmedial line.

Hab. U.S.A., Colorado (*Bruce*), 1 ♀. *Exp.* 34 millim.

1557. Eriopyga incincta. (Plate LXXXVI. fig. 29.)

Mamestra incincta, Morr. Proc. Bost. Soc. N. H. xvii. p. 156 (1874); Smith, Cat. Noct. N. Am. p. 203.

Head and thorax grey mixed with fuscous brown; tarsi with pale rings; abdomen fuscous brown. Fore wing brownish grey with a slight violaceous tinge and irrorated with fuscous; an indistinct waved subbasal line from costa to submedian fold; antemedial line oblique, waved; claviform absent; orbicular and reniform with pale annuli, the former small or moderate, somewhat oblique, the latter filled in with fuscous; a more or less distinct medial shade oblique from costa to lower angle of cell; postmedial line somewhat dentate and with a series of black points beyond it on the veins, bent outwards below costa, incurved at discal fold and below vein 4, some pale points beyond it on costa; subterminal line pale, defined on inner side by a brown shade forming somewhat dentate marks at middle, angled outwards at vein 7 and excurved at middle. Hind wing whitish irrorated with brown, the veins and terminal area suffused with brown, in female wholly suffused with brown; the underside whitish irrorated with brown, a dark discoidal lunule and indistinct curved postmedial line with slight dark streaks at the veins.

Hab. U.S.A., Massachusetts, Illinois, Colorado, 1 ♂, 2 ♀. *Exp.* 34–36 millim.

1558. Eriopyga perfusca, n. sp. (Plate LXXXVI. fig. 30.)

Perigea paupera, Druce, Biol. Centr.-Am., Het. i. p. 279, & ii. p. 480 (nec Wlk.).

Tæniocampa oviduca, Druce, Biol. Centr. Am., Het. i. p. 288 (part.), nec Guen.

Orthodes infirma, Druce, Biol. Centr.-Am., Het. i. p. 289 (part.), nec Guen.

Head and thorax yellowish brown irrorated with whitish; tarsi with pale rings; abdomen fuscous brown mixed with ochreous. Fore wing ochreous brown irrorated with grey and fuscous; subbasal line indistinct, pale, waved, from costa to submedian fold; antemedial line oblique, waved, defined by whitish on outer side; orbicular and reniform with fuscous centres irrorated with white and whitish annuli, the former somewhat oblique elliptical; the postmedial line fuscous defined by whitish on outer side, bent outwards below costa, incurved below vein 5, and produced on the veins to a series of short dark streaks interrupted by white points, some pale points beyond it on costa; subterminal line whitish or ochreous, slightly defined by fuscous on inner side, and excurved at vein 7 and middle; a terminal series of small black lunules. Hind wing ochreous white suffused with brown except the interspaces in.

below, and beyond cell; cilia ochreous white with a brown line through them; the underside whitish, the costal and terminal areas irrorated with brown, a black discoidal spot and indistinct curved postmedial line.

Hab. Mexico, Jalapa (*Hoege*, *Trujillo*), 5 ♂, 4 ♀, type, Godman-Salvin Coll., Las Vigas. *Exp.* 32 millim.

1559. Eriopyga oviduca.

Tæniocampa oviduca, Guen. Noct. i. p. 357 (1852); Smith, Cat. Noct. N. Am. p. 203.
Tæniocampa capsella, Grote, Proc. Ac. Nat. Sci. Phil. xxvi. p. 201 (1874).

Head and thorax purplish brown, the hairs tipped with grey; palpi blackish at sides; abdomen brown mixed with grey. Fore wing grey-brown with a purplish, reddish, or yellowish tinge and irrorated with blackish; subbasal line indistinct, whitish, waved, from costa to submedian fold; antemedial line white, slightly defined on each side by blackish, angled outwards below costa, incurved in cell, then nearly straight; orbicular and reniform moderate, with brown centres and yellowish annuli, the former round or oblique elliptical; the postmedial line blackish, defined by white on

Fig. 63.—*Eriopyga oviduca*, ♂. ½.

outer side and produced to short black streaks on the veins interrupted by white points, bent outwards below costa, excurved to vein 4, then strongly incurved, some pale points beyond it on costa; subterminal line yellowish, defined by dark brown on inner side, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing fuscous brown, the interspaces of basal and inner areas whitish; cilia pale with a brown line through them; the underside whitish irrorated with brown, the costal and terminal areas tinged with purple-brown, a discoidal spot and indistinct curved postmedian line.

Hab. Canada (*Norman*), 1 ♂, Vancouver I. (*J. J. Walker*), 1 ♂; U.S.A., N. and E. States to Florida and Rocky Mts., Massachusetts, Beverly, 1 ♂, 1 ♀, New York (*Packard*), 5 ♂, Trenton Falls (*Doubleday*), 2 ♂, Evans Centre (*Grote*, *Bailey*), 1 ♂, 1 ♀, Albany, 1 ♂ type *capsella*, Illinois, 2 ♀. *Exp.* 26–30 millim.

Larva. Head shining brown, a dark Λ-mark over clypeus. Body sordid brown; subdorsal space paler, defining a series of rounded diamond-shaped dorsal marks; orange on joint 12. Tubercles and

shields black, the cervical shield with the posterior third orange.—H. G. D.

1560. **Eriopyga melanopis**, n. sp. (Plate LXXXVI. fig. 31.)

Head and thorax browish grey mixed with dark brown; abdomen ochreous white tinged with brown. Fore wing brownish grey thickly irrorated with fuscous; subbasal line indistinct, double, from costa to submedian fold; antemedial line indistinct, defined by whitish on inner side, oblique from costa to submedian fold; claviform absent; orbicular and reniform large, blackish with white annuli, the former somewhat oblique elliptical, the latter slightly angled inwards on median nervure; postmedial line defined by whitish on outer side and with a series of short black streaks on the veins beyond it, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line whitish, slightly defined by fuscous on inner side, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of black points; a fine white line at base of cilia. Hind wing white; the veins and terminal area suffused with brown, in female nearly uniformly suffused with brown; the underside with the costal and terminal areas irrorated with brown; a black discoidal spot and slight curved postmedial line.

Hab. U.S.A., Arizona (*Kunze*), 4 ♂, 1 ♀, type. *Exp.* 30 millim.

Subsp. 1. Fore wing with the ante- and postmedial lines less distinct, the latter very minutely dentate; the stigmata less prominently filled in with black.

Hab. U.S.A., S.W. Colorado (*Oslar*), 1 ♂, 1 ♀.

1561. **Eriopyga orobia.** (Plate LXXXVI. fig. 32.)

Mamestra orobia, Harv. Can. Ent. viii. p. 154 (1876); Smith, Cat. Noct. N. Am. p. 203.

♂. Head and thorax mottled white, reddish brown, and dark brown; abdomen brown irrorated with white and dorsally tinged with olive-yellow. Fore wing olive-brown irrorated with white; subbasal line white, from costa to submedian fold; antemedial line white, slightly defined on each side by brown, oblique, waved, incurved in cell and angled inwards on vein 1; orbicular and reniform defined by white, the former round, the latter rather constricted at middle; postmedial line white, slightly defined by brown on inner side and produced to a series of short dark streaks on the veins, interrupted by a series of white points, some white points beyond it on costa; subterminal line white minutely waved, somewhat incurved below vein 3; a terminal series of slight points. Hind wing white irrorated with brown, the veins and terminal area brown; the underside white irrorated with brown, a dark discoidal spot.

Hab. U.S.A., Texas, 1 ♂ type. *Exp.* 30 millim.

*1562. Eriopyga utahensis. (Plate LXXXIX. fig. 27.)

Tæniocampa utahensis, Smith, Pr. U.S. Nat. Mus. x. p. 473 (1887); id. Cat. Noct. N. Am. p. 203.

♂. Head brown with an ochreous tinge and irrorated with fuscous. Fore wing with the antemedial line very indistinct, excurved in interspaces; orbicular small, round, with pale annulus defined by black; reniform moderate, with pale annulus defined by black and its lower part filled in with fuscous; postmedial line very indistinctly double filled in with pale colour, bent outwards below costa, excurved to vein 4, then incurved; subterminal line represented by a few pale scales, the area beyond it darker; a fine pale line at base of cilia. Hind wing pale tinged with ochreous, the veins and terminal area suffused with brown; the underside with dark irroration, a small discoidal spot and punctiform postmedial line.

Hab. U.S.A., Utah, Fort Thornburgh. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

1563. Eriopyga ochrota. (Plate LXXXVII. fig. 1.)

Himella ochrota, Schaus, J. N.Y. Ent. Soc. xi. p. 233 (1903).

♂. Head and thorax grey-brown mixed with ochreous, the scales tipped with white; palpi blackish at sides; tarsi blackish ringed with ochreous; abdomen greyish fuscous brown. Fore wing ochreous thickly irrorated with fuscous brown, especially the costal and terminal areas; subbasal line represented by a dark striga from costa; antemedial line indistinct, oblique, waved; claviform very faintly defined by black scales; orbicular and reniform small, ochreous defined by black, the former round, the latter open above and below and with white point at its upper extremity; postmedial line indistinct, minutely dentate, bent outwards below costa, then oblique, the area between it and subterminal line more ochreous except at costa; subterminal line with a series of prominent black spots on its outer side from vein 7 to inner margin, angled outwards at vein 7 and excurved at middle; cilia ochreous irrorated with black. Hind wing ochreous white slightly irrorated with brown, a dark terminal line; the underside with the costal area more strongly irrorated, a black discoidal spot.

Hab. Mexico, Las Vigas, 1 ♂, San Andres Chanchicomula, type† ♂ in Coll. Schaus. *Exp.* 30 millim.

*1564. Eriopyga obtusa.

Tæniocampa obtusa, Smith, Pr. U.S. Nat. Mus. x. p. 474 (1887); id. Cat. Noct. N. Am. p. 204.

Dark grey thickly irrorated with black. Fore wing with the subbasal and antemedial lines obsolete; claviform narrow, slightly yellowish defined by black; orbicular small, yellowish defined by

black; postmedial line obsolete; subterminal line represented by a series of yellowish points; a terminal series of black points. Hind wing white; the underside grey-white with some dark irroration on costal area.

Hab. U.S.A., Arizona. *Exp.* 27 millim. This species is unknown to me.

Sect. II. Antennæ of male serrate and fasciculate.

A. Fore wing with the subterminal line arising from costa before apex.
  a. Fore wing with black streak in cell between orbicular and reniform.
    a^1. Fore wing with the antemedial line excurved below cell ..... *planalis*.
    b^1. Fore wing with the antemedial line not excurved below cell ..... *agrotiformis*.
  b. Fore wing without black streak in cell.
    a^1. Fore wing with the postmedial line bent outwards below costa and incurved below vein 4.
      a^2. Fore wing with the reniform slightly angled inwards on median nervure, the terminal area darker than the ground-colour ..... *perforata*.
      b^2. Fore wing with the reniform not angled inwards on median nervure, the terminal area not darker than the ground-colour.
        a^3. Fore wing reddish brown ..... *rufula*.
        b^3. Fore wing ferruginous red ..... *reliqua*.
        c^3. Fore wing ochreous tinged with rufous ..... *trifascia*.
    b^1. Fore wing with the postmedial line almost evenly curved.
      a^2. Fore wing reddish brown tinged with fuscous ... *culea*.
      b^2. Fore wing brownish ochreous to fulvous..... *consopita*.
B. Fore wing with the subterminal line arising from termen just below apex.
  a. Fore wing with the subterminal line double, oblique... *diplogramma*.
  b. Fore wing with the subterminal line single, angled at discal fold ..... *euryte*.

1565. Eriopyga planalis. (Plate LXXXVII. fig. 2.)

Agrotis planalis, Grote, A. M. N. H. (5) xi. p. 53 (1883); Smith, Cat. Noct. N. Am. p. 206.

♂. Head and thorax fuscous brown, edges of tegulæ more rufous; pectus ochreous; abdomen ochreous irrorated with fuscous. Fore wing dull reddish brown suffused with fuscous; a double, waved subbasal line from costa to submedian fold; a double, oblique, waved antemedial line angled inwards on median nervure and vein 1; claviform represented by a few black scales; orbicular and reniform small, with rather paler annuli incompletely defined by black, the former round, a diffused black fascia between them; postmedial line indistinctly double and minutely waved, bent outwards below costa, incurved at discal fold and below vein 4; subterminal line very indistinct, slightly angled outwards at vein 7 and excurved at middle, some small triangular dark spots on inner side between veins 7 and 4. Hind wing yellowish suffused with fuscous brown;

the underside ochreous white, the costal area irrorated with brown, a small discoidal spot, and curved, minutely waved, postmedial line.

Hab. U.S.A., New Mexico, Beulah, 1 ♂. *Exp.* 36 millim.

1566. Eriopyga agrotiformis. (Plate LXXXVII. fig. 3.)

Graphiphora agrotiformis, Grote, Can. Ent. xiii. p. 14 (1881); Smith, Cat. Noct. N. Am. p. 200.

♀. Head and thorax black-brown, the head and tegulæ with a reddish tinge and the latter with pale tips; abdomen dark brown irrorated with ochreous. Fore wing black-brown with a purplish tinge; an indistinct waved subbasal line from costa to submedian fold, in base of which there is a slight black streak; antemedial line indistinct, double, oblique, waved: orbicular and reniform moderate, with fuscous centres and grey annuli defined by black, the former rounded, a deep black patch between them in cell; postmedial line indistinct, double, minutely waved, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line reddish ochreous, defined by somewhat dentate small black marks on inner side, most strongly towards costa, angled outwards at vein 7 and slightly excurved at middle, the area beyond it paler fuscous brown; a terminal series of black striæ. Hind wing yellowish white thickly irrorated with brown; the underside with the costal and terminal areas irrorated with brown, a discoidal lunule and sinuous postmedial line.

Hab. U.S.A., Colorado, 2 ♀ type. *Exp.* 34 millim.

*1567. Eriopyga perforata. (Plate LXXXVII. fig. 4.)

Tæniocampa perforata, Grote, Papilio, iii. p. 73 (1883); Smith, Cat. Noct. N. Am. p. 203.

♀. Head and thorax pale reddish brown irrorated with brown; abdomen yellow-brown. Fore wing pale reddish brown with darker irroration; traces of a pale waved subbasal line from costa to submedian fold; an indistinct, oblique, waved antemedial line, defined by pale colour on inner side and angled outwards below costa; orbicular and reniform well developed, with indistinct pale annuli, the former round, the latter with its lower part tinged with fuscous; an indistinct curved medial line; postmedial line indistinct, double filled in with pale colour, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, some pale points beyond it on costa; subterminal line pale, angled outwards at vein 7, the area beyond it slightly darker and with blackish streaks on the veins; a fine pale line at base of cilia. Hind wing pale suffused with dull reddish brown; cilia ochreous with a slight brown line through them; the underside pale, irrorated with brown, a discoidal point and traces of a postmedial line.

Hab. U.S.A., Arizona, in Coll. Schaus. *Exp.* 36 millim.

1568. Eriopyga rufula.

Dianthœcia rufula, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 64 (1874); Smith, Cat. Noct. N. Am. p. 203.

Head and thorax purplish rufous, the hairs tipped with grey; abdomen grey-brown, the lateral and anal tufts tinged with purplish. Fore wing purplish rufous sparsely irrorated with white; a slight white subbasal line from costa to submedian fold; a somewhat oblique waved white antemedial line, sometimes with a fuscous line on its outer edge; orbicular and reniform moderate, defined by white, the former round, the latter with its lower part filled in with fuscous; postmedial line white, sometimes with a

Fig. 64.—*Eriopyga rufula*, ♂. ½.

fuscous line on inner edge, produced to a series of black and white points on the veins, bent outwards below costa, somewhat incurved at discal fold and strongly below vein 4; subterminal line white, defined by deeper rufous on inner side, slightly angled outwards at vein 7 and excurved at middle; a terminal series of dark points. Hind wing whitish, the veins and terminal area suffused with brown, almost wholly suffused in female; the underside whitish, the costal and terminal areas irrorated with brown, a discoidal point and postmedial series of points on the veins.

Hab. U.S.A., Colorado, California, 3 ♂, 6 ♀, type, (*Walsingham*) 1 ♂, 3 ♀, S. Francisco (*J. J. Walker*), 1 ♀. *Exp.* 30–34 millim.

Larva. Head shining brown, darker reticulate, a dark Λ-mark over clypeus. Body as in *oviducta*, but the posterior two-thirds of cervical shield orange.—H. G. D.

*1569. Eriopyga reliqua. (Plate LXXXIX. fig. 29.)

Tæniocampa reliqua, Smith, Journ. N.Y. Ent. Soc. vii. p. 226 (1899); Dyar, Cat. Lep. N. Am. p. 166.

♀. Ferruginous red-brown; frons and metathoracic crest with the scales tipped with grey; abdomen pale. Fore wing with the subbasal line defined by a few black scales, some black scales below base of cell; antemedial line double at costa and defined by some white scales on inner side, excurved in interspaces; claviform absent; orbicular and reniform rather large, pale and ill-defined, the former elongate; an ill-defined brown medial shade; postmedial line dark, defined by white scales on outer side, minutely dentate, bent outwards

below costa, excurved to vein 4, then incurved; subterminal line yellowish, defined by some dark scales on outer side, slightly angled outwards at vein 7; terminal area slightly irrorated with grey; cilia pale intersected with brown. Hind wing whitish tinged with reddish brown, the veins darker; underside with rufous irroration, a discoidal spot and postmedial line.

Hab. U.S.A., Colorado, Park Co., 10,000 feet. *Exp.* 25 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

*1570. Eriopyga trifascia. (Plate LXXXIX. fig. 28.)

Tæniocampa trifascia, Smith, Trans. Am. Ent. Soc. xviii. p. 118 (1891); id. Cat. Noct. N. Am. p. 202.

Head and tegulæ whitish ochreous; thorax rufous; abdomen whitish. Fore wing rufous irrorated with fuscous, the costal area ochreous white to the postmedial line; subbasal line pale; antemedial line broad, pale, evenly excurved; claviform absent, orbicular small, rounded, pale with fuscous centre; reniform moderate, irrorated with black, a dark medial shade; postmedial line broad, pale, bent outwards below costa and incurved below vein 4; subterminal line broad, pale, diffused on outer side, defined on inner side by some dark scales; a terminal series of small black lunules; cilia with some dark points. Hind wing white, the underside slightly tinged with ochreous.

Hab. U.S.A., Colorado, Foothills. *Exp.* 27–30 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

1571. Eriopyga culea. (Plate LXXXVII. fig. 5.)

Mesogona culea, Guen. Noct. i. p. 404 (1852); Smith, Cat. Noct. N. Am. p. 202.

Tæniocampa modifica, Morr. Proc. Bost. Soc. N. H. xvii. p. 150 (1874).

Head and thorax whitish tinged with pale rufous and with purplish brown behind; palpi blackish at sides; abdomen brownish grey, the anal tuft pale rufous. Fore wing pale rufous irrorated with fuscous, the terminal area slightly tinged with fuscous; antemedial line fuscous, defined by whitish on inner side, very oblique and very slightly angled at median nervure; orbicular represented by a small brownish spot; reniform very faintly defined by whitish and with its lower part filled in with fuscous; postmedial line fuscous, defined by whitish on outer side, slightly curved from costa to vein 6, then oblique; subterminal line represented by a series of blackish points in the interspaces. Hind wing yellowish white suffused with brown except towards base; a slight discoidal lunule and curved postmedial line; the underside whitish.

Hab. U.S.A., 1 ♀, Massachusetts, New York, New Jersey, Illinois, Florida, 1 ♂ type. *Exp.* 32–34 millim.

1572. Eriopyga consopita. (Plate LXXXVII. fig. 6.)

Graphiphora consopita, Grote, Papilio, i. p. 154 (1881); Smith, Cat. Noct. N. Am. p. 202.

♀. Head and thorax brownish ochreous to bright fulvous; pectus and legs whitish; abdomen ochreous. Fore wing brownish ochreous to bright fulvous; an indistinct oblique pale antemedial line defined by pale colour on inner side; orbicular and reniform with faint whitish annuli, the former round, the latter with a slight fuscous tinge in lower extremity; postmedial line defined by pale colour on outer side, slightly excurved from costa to vein 4, then oblique; traces of a subterminal series of points. Hind wing whitish, the terminal area tinged with ochreous; the underside white.

Hab. U.S.A., Arizona, Prescott, 2 ♀ type. *Exp.* 36 millim.

*1573. Eriopyga diplogramma. (Plate LXXXVII. fig. 7.)

Himella diplogramma, Schaus, J. N.Y. Ent. Soc. xi. p. 232 (1903).

♂. Head and thorax creamy white mixed with pale rufous, especially on head and tegulæ; tarsi brown with pale rings; abdomen rufous dorsally tinged with fuscous, the anal tuft ochreous. Fore wing with the apex acute and somewhat produced, creamy white, the veins slightly defined by rufous streaks, the inner area suffused with purplish brown from near base to near tornus; antemedial line represented by an oblique dark striga from costa and an oblique olive line, with another beyond it, from submedian fold to inner margin; orbicular represented by a black point, reniform by a small blackish triangular mark; a diffused olive medial line arising from a dark spot on costa, very oblique to lower angle of cell, where it is acutely angled, then oblique; postmedial line represented by a dark point on costa, a rufous line bent outwards below costa and dark points on veins 2, 1, and inner margin; some dark striæ on costa towards apex; subterminal line represented by an oblique streak from termen just below apex, then by a double oblique line defined on inner side by small dentate dark marks to the brown inner area; some black points on termen; cilia chequered white and rufous. Hind wing semihyaline whitish, tinged with reddish brown on the veins and marginal areas; cilia ochreous; the underside with the costal area irrorated with a few large brown scales, a small discoidal spot and postmedial and terminal series of points.

Hab. Mexico, Las Vegas, type † ♂ in Coll. Schaus. *Exp.* 30 millim.

1574. Eriopyga euryte.

Apamea euryte, Druce, Biol. Centr.-Am., Het. ii. p. 477, pl. 93. f. 22 (1898).

Head and thorax pale rufous irrorated with fuscous; sides of palpi and frons fuscous; abdomen fuscous, the anal tuft and ventral

surface pale rufous. Fore wing rufous, sparsely irrorated with black, and the costal area suffused with whitish; the veins streaked with white and on costal area defined by dark streaks; traces of a whitish subbasal line from costa to submedian fold; an indistinct antemedial line oblique from costa to subcostal nervure, then waved; orbicular with minute ferruginous centre and ill-defined whitish annulus; the reniform constricted at middle, with ferruginous annulus slightly marked with black above and strongly below; a diffused medial fuscous line angled at median nervure; the post-medial line represented by a series of black points on the veins, very oblique from costa to vein 6, where it is met by an interrupted oblique streak from apex, then inwardly oblique and with a fuscous shade on outer side, some dark points beyond it on costa; subterminal line represented by faint traces of a series of black points; a terminal series of black points; the apex somewhat produced and acute. Hind wing fuscous brown; the cilia ochreous; the underside ochreous irrorated with fuscous, a black discoidal spot, curved postmedial line, with series of short streaks on the veins and terminal series of points.

Hab. Costa Rica, Irazu (*Rogers*), 1 ♂, 1 ♀, type Godman-Salvin Coll.; Brazil, Castro Paraña, São Paulo. *Exp.* 32 millim.

Sect. III. Antennæ of male ciliated.

A. Femora and tibiæ of male fringed with long pink hair; fore wing on underside with the cell clothed with silky downturned hair; hind wing on underside clothed with downturned hair from costa to median nervure.

a. Fore and hind wings of male with the silky hair not extending beyond the cell; palpi with the 3rd joint rather short.

a[1]. Hind tibiæ of male with the fringes of hair greatly developed.

1575. Eriopyga turca.

Noctua turca, Linn. Faun. Suec. p. 322 (1761); Esp. Schmett. iv. pl. 122. figs. 5, 6; Hübn. Eur. Schmett., Noct. f. 218; Dup. Lép. Fr. vii. p. 56, pl. 104. fig. 1; Steph. Ill. Brit. Ent., Haust. ii. p. 150; Staud. Cat. Lep. pal. p. 193.
Phalæna volupia, Rott. Naturf. ix. p. 123 (1776).
Mythimna limbata, Butl. Trans. Ent. Soc. 1881, p. 173.
Leucania turcella, Staud. Iris, x. p. 338 (1897).

Head and thorax bright rufous to red-brown tinged with purplish; antennæ whitish; pectus and legs purple-red in male; abdomen rufous, the ventral surface purple-red in male. Fore wing pale rufous or brown, thickly striated with dark rufous or purple-brown and sparsely irrorated with black; subbasal line represented by a dark striga from costa; antemedial line slightly sinuous, oblique from costa to median nervure; claviform and orbicular absent; reniform a more or less prominent oblique white bar defined by fuscous; postmedial line oblique, slightly sinuous, sometimes produced to short streaks on the veins; a terminal series of black points. Hind wing purplish red, the discal area suffused with

fuscous. Underside of both wings purplish pink irrorated with fuscous; a postmedial line oblique on fore wing, excurved below costa on hind wing and not reaching inner margin.

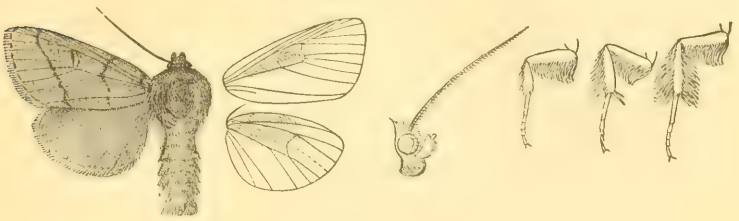


Fig. 65.—*Eriopyga turca*, ♂. ♮.

Ab. 1. *turcella*. Smaller and paler.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; N. Italy; Sweden; Armenia; Mongolia, Urga; E. Siberia, Amur, 1 ♂, Dahuria, Ussuri; Japan, Hakodaté, 1 ♂, Oiwake (*Pryer*), 2 ♂, Kiushiu, 1 ♀, Yokohama (*Jonas*, *Maries*), 3 ♂, 2 ♀, type *limbata*; Corea, Gensan (*Leech*, *Ito*), 2 ♂; C. China, Kiukiang (*Pratt*), 1 ♀, Changyang (*Pratt*), 2 ♂, 1 ♀, Omei-shan, 1 ♂. *Exp.* 44–54 millim.

Larva. Meyr. Brit. Lep. p. 68; Barrett, Lep. Brit. v. p. 179, pl. 206. fig. 1.

Ochreous yellow freckled with dark grey and purplish, anteriorly suffused with purplish; dorsal and subdorsal lines pale ochreous, the latter dark-edged; a dorsal series of dark grey marks; head brown. Food-plant: grasses. 8–5.

b^1. Hind tibiæ of male with the fringes of hair much less developed.
  a^2. Fore wing with the antemedial line angled outwards below costa, then erect ..... *grandis*.
  b^2. Fore wing with the antemedial line oblique throughout. *divergens*.
  c^2. Fore wing with the antemedial line evenly curved..... *curvata*.

1576. Eriopyga grandis.

Mythimna grandis, Butl. A. M. N. H. (5) i. p. 79 (1878); id. Ill. Het. B. M. ii. p. 22, pl. 28. f. 7.

Head and thorax bright rufous to olive-ochreous irrorated with fuscous; antennæ whitish; abdomen rufous. Fore wing rufous or ochreous, more or less thickly striated with fuscous; an indistinct waved antemedial line oblique from costa to middle of cell; reniform represented by a whitish discoidal lunule, slightly defined by fuscous and somewhat angled inwards on median nervure; postmedial line oblique, slightly incurved to costa, somewhat dentate and produced to short streaks on the veins, angled outwards on vein 1; a terminal series of black points. Hind wing purplish pink, the discal area suffused with fuscous; the underside paler,

irrorated with fuscous, with small discoidal lunule, sinuous postedial line, and some points on termen.

Fig. 66.—*Eriopyga grandis*, ♂. ½.

Hab. Japan, Hakodaté, 2 ♂, 1 ♀, type, Oiwake (*Pryer*), 2 ♂, 2 ♀, Tokio (*Maries*), 1 ♂, 1 ♀, Yokohama (*Jonas*, *Pryer*), 2 ♀; Corea, Gensan (*Leech*), 2 ♂, 1 ♀. *Exp.* 52–58 millim.

1577. Eriopyga divergens.

Mythimna divergens, Butl. A. M. N. H. (5) i. p. 79 (1878); id. Ill. Het. B. M. ii. p. 22, pl. 28. f. 8; Staud. Cat. Lep. pal. p. 193.

Head deep rufous, the vertex and thorax olive-ochreous, sometimes tinged with rufous and irrorated with fuscous; antennæ whitish at base; pectus, legs, and abdomen rufous, the last dorsally ochreous towards base. Fore wing olive-ochreous, irrorated and striated with fuscous and more or less tinged with rufous; antemedial line oblique, slightly sinuous; reniform represented by a whitish lunule, angled inwards on median nervure, and with a rufous patch between it and postmedial line; postmedial line oblique, slightly incurved to costa, somewhat dentate and produced to short streaks on the veins; a terminal series of black points. Hind wing pinkish entirely suffused with fuscous, the cilia purplish pink. Underside of both wings purplish red; a postmedial line, oblique on fore wing, sinuous on hind wing, which has a small discoidal spot.

Hab. E. Siberia, Ussuri; Japan, Hakodaté (*Whitely*), 2 ♂, 1 ♀, type, Oiwaké (*Pryer*), 2 ♂, Yokohama (*Pryer*), 1 ♂, 1 ♀. *Exp.* 54–56 millim.

1578. Eriopyga curvata. (Plate LXXXVII. fig. 8.)

Mythimna curvata, Leech, Trans. Ent. Soc. 1900, p. 130.

Head and thorax rufous, pale olive or grey irrorated with fuscous, the head more rufous; antennæ whitish at base; pectus, legs, and abdomen rufous. Fore wing pale olive or rufous, irrorated and striated with purple-brown; subbasal line represented by a dark striga from costa; antemedial line slightly and rather obliquely curved; reniform represented by a rather indistinctly defined pale lunule with slight black points before and beyond it at lower angle of cell; postmedial line slightly angled outwards below costa, then

oblique and slightly incurved below vein 4; a terminal series of black points. Hind wing rufous, uniformly suffused with fuscous, the cilia pale red. Underside purplish pink irrorated with fuscous, fore wing with some fuscous on disk; both wings with slight discoidal spots, somewhat waved postmedial line, and terminal series of points.

Ab. 1. Fore wing with the veins whitish, the striation much thicker and more prominent.

Ab. 2. Fore wing with the lines hardly traceable.

Hab. Corea, Gensan (*Leech*), 1 ♂, 1 ♀, type; C. China, Chang-yang (*Pratt*), 1 ♂, 4 ♀, Washan (*Pratt*), 1 ♀, Chia-kou-ho (*Pratt*), 1 ♀. *Exp.* 50–60 millim.

b. Fore and hind wings of male on underside with the rough hair extending to near termen; palpi with the 3rd joint rather long; abdomen with lateral tufts of long pink hair from base.

1579. Eriopyga rhodotrichia, n. sp.

♂. Head and thorax rufous, the hairs and scales tipped with grey; palpi blackish at sides; abdomen fuscous brown, the anal tuft ochreous, the fringes of hair on legs and abdomen and the ventral surface of latter pink. Fore wing rufous tinged with pink

Fig. 67.—*Eriopyga rhodotrichia*, ♂. ½.

and irrorated with black; traces of a waved subbasal line from costa to submedian fold, angled outwards on median nervure; an indistinct oblique waved antemedial line; orbicular and reniform indistinctly defined by brown, rounded; an indistinct oblique medial shade from cell to inner margin; postmedial line very indistinct, highly dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved; subterminal line only defined by a dark shade on its inner side, slightly angled outwards at vein 7, then oblique. Hind wing ochreous suffused with fuscous brown; the underside ochreous with the hair fulvous, a small black discoidal spot and sinuous postmedial line.

Hab. Brazil, Rio Janeiro, 1 ♂ type. *Exp.* 36 millim.

B. Femora of male with thick tufts of rufous hair; abdomen with lateral tufts of rufous hair from base; fore wing with the cell and area below it down to submedian fold clothed on underside with rough yellow hair.

1580. Eriopyga pallescens.

Himella pallescens, Schaus, J. N.Y. Ent. Soc. xi. p. 235 (1903).

♂. Head and thorax red-brown tinged with grey; palpi

blackish at sides; abdomen black-brown, the base and extremity ochreous; the hair on femora, the lateral tufts, and ventral surface of abdomen rufous. Fore wing pale pink-brown sparsely irrorated with black; traces of a curved dark antemedial line; orbicular represented by a black point, the reniform by a red spot with black points above and below it; a fuscous medial shade excurved at middle; postmedial line represented by a series of black points,

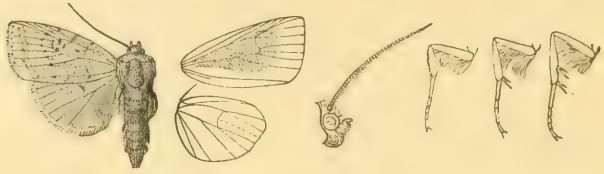


Fig. 68.—*Eriopyga pallescens*, ♂. ½.

oblique from costa to vein 6, then inwardly oblique; subterminal line very indistinct, pale, faintly defined by brown on each side and with two fuscous points above inner margin, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing ochreous white tinged with brown, especially on marginal areas; cilia ochreous; the underside with black discoidal spot, postmedial series of slight striæ on the veins, and terminal series of points.

Hab. Brazil, Organ Mts., Tijuca (*S. R. Wagner*), 1 ♂, São Paulo, type † ♂ in Coll. Schaus; Paraguay, Sapucay (*Foster*), 1 ♀. *Exp.* 36 millim.

C. Mid femora and tibiæ of male with tufts of long thick hair; abdomen with very large lateral tufts from base and fringed with hair towards extremity; fore wing on underside with the cell clothed with silky downturned hair.
  a. Fore wing with the postmedial line minutely serrate.
    a^1. Abdomen of male with the lateral tufts from base fuscous ..... *fuscibarbata.*
    b^1. Abdomen of male with the lateral tufts from base purple ..... *vinobarbata.*
  b. Fore wing with the postmedial line even.
    a^1. Fore wing ochreous suffused with rufous, the subterminal line almost even.
      a^2. Fore wing with the reniform not concave towards base ..... *melanogaster.*
      b^2. Fore wing with the reniform concave towards base ..... *secedens.*
    b^1. Fore wing grey irrorated with red-brown, the subterminal line slightly sinuous ..... *excavata.*

1581. Eriopyga fuscibarbata, n. sp.

♂. Head and thorax pale red-brown; palpi blackish; pectus and legs dark brown; abdomen black-brown, the lateral fringes, anal

tuft, and ventral surface yellow-brown. Fore wing pale greyish ochreous suffused with rufous; a slight waved subbasal line from costa to below cell with a black point beyond it in cell; an indistinct double, slightly waved, antemedial line, incurved in cell; orbicular and reniform large, rufous with pale annuli, the former round, the latter lunulate, concave towards base; a diffused oblique line from lower angle of cell to inner margin; postmedial line obsolete towards costa, incurved below vein 4, with two series of black points beyond it on the veins, the outer slight; subterminal line brown defined by

Fig. 69.—*Eriopyga fuscibarbata*, ♂. ½.

pale colour on outer side, slightly excurved at vein 7 and middle; a terminal series of black points. Hind wing fuscous brown; the cilia ochreous; the underside ochreous suffused with fuscous, the costal area tinged with rufous and irrorated with brown, a discoidal point and curved postmedial line.

Hab. Brazil, Rio Janeiro, 1 ♂ type. *Exp.* 42 millim.

1582. **Eriopyga vinobarbata**, n. sp. (Plate XC. fig. 5.)

Head and thorax pale reddish brown tinged with grey; abdomen greyish, dorsally tinged with fuscous, the anal tuft ochreous, the lateral tufts of male purple. Fore wing greyish, tinged with reddish or purplish brown and slightly irrorated with black; traces of a waved subbasal line from costa to submedian fold, with a small black spot beyond it in cell; an indistinct double, waved antemedial line, oblique from costa to median nervure; orbicular and reniform with their centres defined by brown and indistinct pale annuli, the former elliptical, the latter narrow, oblong, with a black spot in its lower extremity; an indistinct diffused medial line; postmedial line defined by greyish on outer side, minutely serrate, bent outwards below costa, excurved to vein 5, then incurved, a series of black points beyond it on the veins; subterminal line pale, defined by fuscous on inner side, very slightly angled outwards at vein 7, where it is met by an oblique black striga from apex, then incurved; a terminal series of black points. Hind wing pale, the veins and terminal area suffused with brown; the underside with the costal area irrorated with brown, a black discoidal lunule and postmedial and terminal series of points.

Hab. Ecuador, Balzapamba, 1 ♀ type, ♂ in Coll. Oberthür, Riobamba. *Exp.* 38 millim.

*1583. **Eriopyga melanogaster.** (Plate XC. fig. 6.)

Orthodes melanogaster, Guen. Noct. i. p. 373 (1852).

♂. Head and thorax pale rufous; abdomen fuscous, with the lateral and anal tufts ochreous. Fore wing greyish ochreous suffused with purplish rufous, and with very slight fuscous irroration chiefly on the veins and costal area; subbasal line represented by a few dark scales; antemedial line defined by whitish on inner side, strongly incurved in cell and slightly bent inwards to inner margin; claviform absent; orbicular and reniform large, defined by whitish, the former elliptical; an oblique medial shade from lower angle of cell to inner margin; postmedial line slightly bent outwards below costa, excurved to vein 5, then strongly incurved, some black and white points beyond it on the veins; subterminal line almost straight, whitish defined by brown on inner side; a terminal series of small brown spots; cilia olive-ochreous. Hind wing reddish brown; the cilia pale brown, whitish at tips; the underside whitish, the costal area irrorated with rufous, some postmedial points on the veins, an indistinct subterminal line.

Hab. Brazil, New Fribourg, type † ♂ in Coll. Oberthür. *Exp.* 44 millim.

1584. **Eriopyga secedens.** (Plate LXXXVII. fig. 9.)

Himella secedens, Schaus, J. N.Y. Ent. Soc. xi. p. 234 (1903).

Head and thorax rufous with a purplish-pink tinge; sides of palpi and frons blackish; abdomen fuscous, the anal tuft ochreous, the lateral fringes and ventral surface rufous, the basal tufts yellow. Fore wing rufous suffused with purplish pink and with some dark irroration; traces of a waved subbasal line from costa to submedian fold, with a small black spot beyond it in cell; antemedial line indistinct, ochreous, only traceable from median nervure to inner margin; orbicular and reniform large with ochreous annuli, the former round; a slight medial shade bent inwards to costa; postmedial line rather indistinct, even, bent outwards below costa, excurved to vein 4, then incurved, and with a series of black points beyond it on the veins; subterminal line ochreous, defined by brown on inner side, slightly excurved below costa and incurved towards inner margin. Hind wing yellowish suffused with fuscous, the cilia yellow; the underside yellow, the costal area suffused with purplish pink, a black discoidal spot and slightly sinuous postmedial line.

Hab. Brazil, Castro Paraña, 1 ♀, type † ♂ in Coll. Schaus; Bolivia, Cochabamba, 1 ♀, La Paz. *Exp.* 36 millim.

1585. **Eriopyga excavata**, n. sp. (Plate LXXXVII. fig. 10.)

Head and thorax red-brown mixed with grey; palpi blackish at sides; abdomen and lateral tufts fuscous, the ventral surface reddish mixed with grey, the anal tuft yellowish. Fore wing grey thickly irrorated with red-brown and slightly with black; an indistinct

curved subbasal line from costa to submedian fold; antemedial line indistinct, defined by grey on inner side, waved, oblique from costa to median nervure, then erect; orbicular and reniform large, brown irrorated with grey and with grey annuli, the former elliptical, the latter rather concave towards base; an indistinct medial line from cell to inner margin; postmedial line defined by grey on outer side, bent outwards below costa and strongly incurved below vein 4, an indistinct series of short black streaks interrupted by grey points on the veins beyond it; subterminal line grey defined by rufous on inner side, slightly excurved below costa; a terminal series of black points defined by an indistinct crenulate grey line. Hind wing fuscous brown; the cilia pale rufous; the underside whitish irrorated with brown, a dark discoidal lunule and traces of a curved postmedial line.

Hab. Brazil, Rio Janeiro, 1 ♂, 1 ♀, type; Ecuador, Riobamba, 1 ♀. *Exp.* 32 millim.

D. Mid femora of male with fold containing a tuft of ochreous hair; abdomen with lateral fringes of hair towards extremity; both wings on underside with the basal costal area and cell clothed with rough hair and scales.

1586. Eriopyga lamptera.

Agrotis lamptera, Druce, P. Z. S. 1890, p. 513; id. Biol. Centr.-Am., Het. ii. p. 482, pl. 94. f. 2.

♂. Head and thorax fulvous; abdomen fuscous black, the lateral fringes of hair, the anal tuft, and ventral surface fulvous. Fore wing pale fulvous with slight darker irroration, the costal area with an olive tinge; antemedial and medial straight lines from cell to inner margin; orbicular and reniform rather darker with pale annuli,

Fig. 70. *Eriopyga lamptera*. ♂. ½.

oblique, quadrate, open above and below; postmedial line fine, fuscous defined by pale colour on inner side, straight and oblique from costa to submedian fold, then slightly bent outwards; subterminal line represented by a series of minute indistinct dentate dark marks, very slightly angled outwards at vein 7 and excurved at middle: a terminal series of black points. Hind wing semihyaline white, the veins, costal and inner areas, and a terminal line fuscous brown; the underside with the costal area tinged with rufous, a postmedial series of rufous striæ on the veins.

♀. Head, thorax, and fore wing deep purplish red-brown.

Hab. Br. Honduras, Belize; Guatemala, Pantaleon (*Champion*), 1 ♂ type, (*Rodriguez*) 1 ♀, Godman-Salvin Coll.; Paraguay, Sapucay (*Foster*), 2 ♀. *Exp.* 44 millim.

E. Legs of male normal.

a. Thorax of male with tuft of very large curled scales on dorsum; abdomen with lateral and anal fringes of very long hair; fore wing with fringe of hair from basal fourth of costa, the cell and area below it clothed with long downturned scales from base to beyond middle and to below cell.

1587. Eriopyga macrolepia.

Næsia mæsta, Druce, Biol. Centr.-Am., Het. i. p. 266, pl. 26. f. 12 (nec Wik.).

♂. Bright ferruginous red; head and tegulæ rather darker; the large scales on thorax pinkish; the fringes of hair on abdomen redder. Fore wing with black and whitish point at base; subbasal line double, waved, from costa to submedian fold, filled in with

Fig. 71.—*Eriopyga macrolepia*, ♂. ½.

yellowish; antemedial line double, waved, filled in with yellowish, the veins beyond it irrorated with black and whitish, especially towards inner margin; orbicular small, whitish, indistinct; reniform ill-defined, with black point on its inner upper side and its lower part filled in with black; a waved medial line excurved at middle; postmedial line indistinct, defined by yellowish on outer side, dentate and produced to black and white points on the veins, bent outwards below costa, incurved at discal fold, incurved to near medial line below vein 4, some pale points beyond it on costa; the area beyond end of cell pinkish; subterminal line represented by a series of black and white dentate marks angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing rufous suffused with fuscous except towards inner margin; the underside with black discoidal point, postmedial line on costal half, and some terminal points.

Hab. Costa Rica, Rio Sucio (*Rogers*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 50 millim.

b. Thorax of male with the pectus clothed with large tufts of scales and hair.
*a*¹. Abdomen of male with lateral tufts of long hair from base and lateral fringes of hair.
*a*². Fore wing with the orbicular and reniform not defined.
*a*³. Hind wing white ..... *gigantea*.
*b*³. Hind wing suffused with brown ..... *flavigera*.
*b*². Fore wing with the orbicular and reniform defined by white.
*a*³. Fore wing with the ground-colour rufous.
*a*⁴. Fore wing with the postmedial line incurved below vein 4 ..... *fulvida*.
*b*⁴. Fore wing with the postmedial line straight, oblique ..... *friburgensis*.
*b*³. Fore wing with the ground-colour whitish ..... *carneigera*.

*1588. Eriopyga gigantea.

Himella gigantea, Schaus, J. N.Y. Ent. Soc. xi. p. 233 (1903).

♂. Head ochreous; thorax pinkish, the hairs tipped with white; legs with the tufts ochreous; abdomen dorsally fuscous, the lateral tufts pinkish, the anal tuft and ventral surface ochreous. Fore

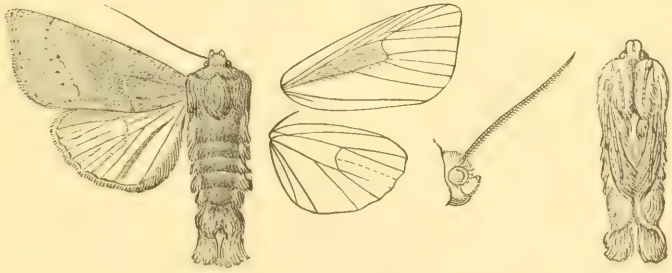


Fig. 72.—*Eriopyga gigantea*, ♂. ½.

wing ochreous white sparsely irrorated with black; the costal area white tinged with pink, the rest of wing with rufous; antemedial line represented by obliquely placed fuscous points in cell and on vein 1; orbicular and reniform represented by rather deeper diffused rufous patches; postmedial line represented by a series of fuscous points bent outwards below costa, excurved to vein 4, then incurved; a terminal series of slight points; cilia ochreous. Hind wing ochreous white; the veins, costal area, and cilia ochreous; the underside with the costal area irrorated with fuscous, some terminal dark points on apical half.

Hab. Brazil, Castro Paraña, type † ♂ in Coll. Schaus. *Exp.* 60 millim.

1589. Eriopyga flavigera. (Plate LXXXVII. fig. 11.)

Hypotrix flavigera, Guen. Noct. i. p. 370 (1852).
Næsia dolens, Druce, Biol. Centr.-Am., Het. i. p. 266 (part.).

♂. Head and thorax pale rufous or ochreous grey; palpi at sides

and legs fuscous; abdomen fuscous, the anal tuft and ventral surface ochreous. Fore wing whitish tinged with pink and in parts with rufous, and irrorated with a few black scales; a black point at base; faint traces of a waved antemedial line; reniform represented by a slight fuscous mark at lower angle of cell or an ochreous lunule; traces of a postmedial line incurved below vein 4 and with a series of black points beyond it on the veins; a more or less distinct, double, nearly straight subterminal line bent outwards to apex and with the area beyond it rather more rufous; a terminal series of black points. Hind wing ochreous tinged with brown; the underside ochreous, the costal area tinged with rufous, a small discoidal spot and curved postmedial line.

Hab. Costa Rica, Irazu, 6000′ (*Rogers*), 1 ♂, Godman-Salvin Coll.; Brazil, New Fribourg, type † in Coll. Oberthür. *Exp.* 40 millim.

*1590. Eriopyga fulvida. (Plate XCIV. fig. 6.)

Eriopyga fulvida, Druce, ined.

♂. Head and thorax fulvous, the hairs slightly tipped with whitish; abdomen pale fulvous, dorsally tinged with fuscous, except at base and extremity, the anal tufts yellow. Fore wing fulvous with a slight whitish gloss; subbasal line represented by a small fuscous spot in cell; antemedial line indistinct, pale, angled inwards in cell, then strongly excurved; orbicular and reniform very large and almost confluent, with pale outlines, the former rounded, the latter slightly concave towards base; postmedial line fulvous, defined by whitish on outer side, bent outwards below costa, incurved below vein 4, and with a series of slight fuscous points beyond it on the veins; subterminal line whitish, defined by fulvous on inner side, nearly straight, oblique; traces of a pale highly waved line just before termen. Hind wing pale yellow, the veins and terminal half tinged with brown; the underside with the costal area suffused with fulvous, a small discoidal spot and slight postmedial line on costal area.

Hab. Brazil, Rio Janeiro (*Dirg*), type † in Coll. Druce. *Exp.* 38 millim.

*1591. Eriopyga friburgensis. (Plate XC. fig. 7.)

Orthodes friburgensis, Guen. Noct. i. p. 374 (1852).

♂. Head and thorax rufous; abdomen pale rufous. Fore wing pale rufous, the costal half deeper rufous from orbicular to postmedial line; subbasal line absent; antemedial line very indistinct, oblique, slightly waved; claviform absent; orbicular and reniform large, defined by whitish, the former oblique elliptical, the latter elliptical; postmedial line double filled in with whitish, slightly bent outwards below costa, then oblique, straight; subterminal line represented by traces of a series of dark points; a series of dark points just before termen connected by a fine waved line. Hind

wing reddish brown, the cilia pale yellowish; the underside whitish tinged with purplish pink, a small discoidal spot and curved postmedial line.

Hab. Brazil, New Fribourg, type † in Coll. Oberthür. *Exp.* 50 millim.

1592. Eriopyga carneigera. (Plate LXXXVII. fig. 12.)

Hypotrix carneigera, Guen. Noct. i. p. 370 (1852).

♂. Head white, the palpi fuscous at side; thorax ochreous white mixed with pale reddish brown; abdomen ochreous white dorsally tinged with fuscous. Fore wing whitish irrorated and in places suffused with pale brown; hardly a trace of the subbasal line; antemedial line curved, defined by white on inner side; orbicular and reniform very large, elliptical, yellowish brown defined by white; an oblique yellow-brown medial shade from cell to inner margin; postmedial line almost obsolete and with traces of a series of points beyond it on the veins; subterminal line prominent, white defined by yellow-brown on inner side, almost straight and not quite reaching costa; a fine pale line at base of cilia. Hind wing white, the veins and margins slightly tinged with ochreous; the underside with the costal area irrorated with brown.

Hab. Brazil, Rio Janeiro, 1 ♂. *Exp.* 46 millim. Type † in Coll. Oberthür.

b^1. Abdomen of male with small lateral tufts of yellow hair from base.
  a^2. Fore wing of male on underside with fringe of large downturned scales from costa at base met by long upturned scales from below cell, a patch of rough scales beyond the cell, the costa highly arched near base, in female slightly arched; hind wing on underside with fringe of long downturned scales from costa and the whole of the rest of the wing clothed with rough scales, smaller on terminal area.
    a^3. Fore wing with the reniform V-shaped ..... *lodebar*.
    b^3. Fore wing with the reniform small, rounded..... *orbica*.
    c^3. Fore wing with the reniform large, kidney-shaped.
      a^4. Fore wing reddish brown, the orbicular and reniform not confluent ..... *lanaris*.
      b^4. Fore wing olive-brown, the orbicular and reniform confluent below ..... *moderata*.

1593. Eriopyga lodebar.

Orthodes lodebar, Druce, Biol. Centr.-Am., Het. i. p. 289, pl. 27. ff. 17, 18 (1889).

♂. Head and tegulæ yellow mixed with bright rufous; palpi blackish at sides; frons with lateral black bars; thorax dark chocolate-brown, pectus and legs mostly pale yellow; abdomen fuscous brown, the anal tuft, lateral tufts, and ventral surface rufous,

the basal tufts pale yellow. Fore wing chocolate with a purplish tinge, except a triangular patch on disk which is deep chocolate; subbasal line very indistinct, pale, straight from costa to submedian fold; antemedial line defined by greyish on inner side, oblique, angled inwards in cell, then slightly sinuous; reniform triangular, chocolate with fine grey annulus; traces of a waved medial line from cell to inner margin; postmedial line slightly defined by greyish on outer side, oblique from costa to reniform, then bent outwards, then erect and crenulate; two pale points on costa before the subterminal line, which is greyish defined by small brown somewhat dentate marks on inner side, angled outwards at vein 7 and

Fig. 73.—*Eriopyga lodebar*, ♂. ½.

excurved at middle. Hind wing dark reddish brown, the cilia paler. Underside of both wings yellowish white, the costal and terminal areas of fore wing and the apex of hind wing purplish red.

♀. Greyer and less red-brown in colour; fore wing with the discal patch black-brown, the reniform dirty white; the underside yellowish irrorated and suffused with red-brown, the disk of fore wing fuscous brown.

Hab. Costa Rica, Irazu, 6000′ (*Rogers*), 1 ♂, 1 ♀, type, Godman-Salvin Coll. *Exp.* ♂ 44, ♀ 40 millim.

1594. Eriopyga orbica, n. sp. (Plate LXXXVII. fig. 13.)

Orthodes lodebar, Druce, Biol. Centr.-Am., Het. i. p. 289 (part.).

♂. Head and tegulæ yellowish mixed with rufous; palpi blackish at sides; thorax purplish brown; hair on pectus and legs pale yellow; abdomen fuscous brown, the anal tuft and ventral surface yellowish tinged with rufous, the basal tufts pale yellow. Fore wing deep purplish brown, the costal area to beyond middle and a wedge-shaped patch on disk chocolate; subbasal line represented by a grey striga from costa; antemedial line defined by greyish on inner side, oblique, angled inwards in cell, then slightly sinuous; orbicular a grey point; reniform a small round greyish spot with brownish centre; an indistinct waved medial line from cell to inner margin; postmedial line defined by greyish on outer side, oblique from costa to reniform, then bent outwards, crenulate and incurved at submedian fold; two pale points on costa before the subterminal line, which is greyish, interrupted, defined on inner

side by small dentate black marks, angled outwards at vein 7 and excurved at middle. Hind wing dark reddish brown, the cilia yellowish. Underside of both wings pale yellowish with a rufous tinge, some fuscous on costa near base and towards apex.

♀. Underside fuscous brown irrorated with grey.

Hab. Mexico, Jalapa (*Trujillo*), 3 ♂, 1 ♀, type; Guatemala, Senahu (*Champion*), 1 ♂, Godman-Salvin Coll. *Exp.* ♂ 42, ♀ 38 millim.

1595. Eriopyga lanaris. (Plate LXXXVII. fig. 14.)

Dyschorista lanaris, Butl. A. M. N. H. (6) vi. p. 97 (1890).
Orthodes cynica, Druce, Biol. Centr.-Am., Het. i. p. 288 (nec Guen.).

♂. Head and thorax dark reddish brown to bright red-brown; palpi black at sides; pectus with the hair pale yellow; abdomen rufous, more or less dorsally tinged with fuscous. Fore wing dark red-brown to bright rufous; the subbasal line double filled in with ochreous, angled outwards below costa, then oblique to vein 1, with a pale striga beyond it in cell; antemedial line defined by ochreous on inner side, incurved in cell and somewhat oblique, a black point before it on vein 1; orbicular and reniform with fine pale outlines slightly defined by blackish, the former oblique elliptical, open above, the latter extending to below cell, its upper extremity somewhat produced and its lower slightly angled inwards at middle; an indistinct dark medial shade, oblique from costa to lower angle of cell; postmedial line defined by ochreous on outer side, oblique from costa to vein 6, then nearly erect and slightly sinuous, a double series of black points beyond it on the veins and some pale points on costa; subterminal line ochreous slightly defined on each side by brown, very slightly bent outwards at vein 7, then straight; a terminal series of black points defined by a fine pale crenulate terminal line; a fine ochreous line at base of cilia. Hind wing brown with a reddish or yellowish tinge; cilia pale rufous. Underside with the hair pinkish; hind wing with fuscous discoidal spot and curved postmedial line.

♀. Rather darker; fore wing with the pale markings more prominent; underside of fore wing dark brown, the costal area greyish with rufous irroration; hind wing greyish, tinged with red and irrorated with brown.

Hab. Mexico, Jalapa (*Trujillo*), 3 ♂, Coatepec (*Brooks*), 1 ♀: Guatemala (*Champion*), 2 ♂, 1 ♀; Costa Rica (*Underwood*, *Rogers*), 7 ♀; Panama, Chiriqui (*Champion*), 1 ♂, 3 ♀, Godman-Salvin Coll.; Brazil, Rio Janeiro, 1 ♂ type, 1 ♀; Ecuador, Riobamba (*Stolzmann*), 1 ♀; Bolivia, Cochabamba (*Germaine*), 1 ♂. *Exp.* 34–44 millim.

1596. Eriopyga moderata. (Plate LXXXVII. fig. 15.)

Cymatophora moderata, Wlk. xi. 707 (1857).

♀. Head and thorax dull grey-brown with a very slight yellowish

tinge; palpi blackish at sides; abdomen grey-brown. Fore wing silky olive-brown; a fine pale subbasal waved line from costa to submedian fold; antemedial line pale, oblique, angled outwards below costa, then sinuous; orbicular and reniform large, with fine white annuli, the former oblique elliptical, the latter constricted at middle and angled inwards on median nervure and confluent with the former; postmedial line very indistinctly defined by grey on outer side, oblique from costa to vein 6 and from vein 4 to inner margin, with an indistinct series of dark points on the veins beyond it and some pale points on costa; subterminal line white defined by fuscous on inner side, slightly excurved at vein 7 and above inner margin; a terminal series of black points defined by a fine crenulate pale line. Hind wing yellowish suffused with brown, especially towards termen; the underside whitish, slightly tinged with red and irrorated with brown on costal area; a dark discoidal lunule and curved postmedial line.

Hab. Colombia, Bogotá (*Stevens*), 1 ♀ type. *Exp.* 32 millim.

b^2. Fore wing of male on underside with fringe of long hair from costa to beyond middle, the cell and area beyond it clothed with long downturned hair; hind wing with some rough scales on basal costal area and some downturned hair in cell.
  a^3. Fore wing with the antemedial line straight from costa to inner margin ..... *crenulata*.
  b^3. Fore wing with the antemedial line sinuous ..... *jamaicensis*.

1597. Eriopyga crenulata.

Orthodes infirma, Guen. Noct. i. p. 375 (1852), part.
Dyschorista crenulata, Butl. A. M. N. H. (6) vi. p. 97 (1890); Smith, Cat. Noct. N. Am. p. 198.
Orthodes cynica, Druce, Biol. Centr.-Am., Het. i. p. 288 (part.).
Orthodes lodebar, Druce, Biol. Centr.-Am., Het. i. p. 289 (part.).

Head and thorax red-brown mixed with some grey; palpi black, whitish in front; sides of frons black; tegulæ with triangular

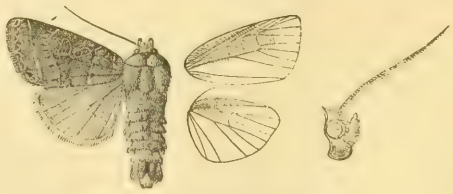


Fig. 74.—*Eriopyga crenulata*, ♂. ½.

black dorsal patch at base; tibiæ and tarsi fuscous with pale rings; abdomen ochreous, dorsally suffused with fuscous, ventrally purplish red. Fore wing ochreous suffused with purplish red, irrorated with fuscous and grey; the costal edge pale; a pale subbasal line

from costa to vein 1; antemedial line fuscous, defined by whitish on inner side, oblique, bent inwards to costa; orbicular and reniform large, with whitish annuli defined by brown, the former oblique, irregularly elliptical; a fuscous medial line oblique from costa to median nervure; postmedial line double filled in with whitish, oblique from just below costa to vein 6, then inwardly oblique and rather sinuous, with a series of short black streaks beyond it on veins 6–1; subterminal line whitish, defined by brown on inner side, slightly angled outwards at vein 7; a terminal series of black lunules defined by a pale dentate line; a pale line through the cilia. Hind wing yellowish suffused with brown; the underside yellowish white, the costal area suffused with brown and the terminal area slightly irrorated with brown, a discoidal lunule and curved postmedial line.

Hab. Canada; U.S.A., N.E. and Middle States, New England, New York, 7 ♂, 2 ♀, type, Missouri, Kansas (*Snow*), 2 ♂, Colorado; Mexico, Jalapa (*Trujillo*), 1 ♂; Guatemala (*Rodriguez*), 1 ♂, 1 ♀; Brazil, Rio Janeiro, 1 ♂, 1 ♀, Organ Mts., Tijuca (*S. R. Wagner*), 1 ♀; Ecuador, Los Rios (*M. de Mathan*), 1 ♀, Godman-Salvin Coll. *Exp.* 36 millim.

1598. **Eriopyga jamaicensis**, n. sp. (Plate LXXXVII. fig. 16.)

Head and thorax purplish red-brown mixed with some grey; palpi blackish at sides; tegulæ with dorsal black spot at base; pectus with the tufts of hair and scales purplish red and black; abdomen fuscous, the ventral surface grey tinged with purplish and irrorated with black, the genital tufts yellow. Fore wing grey-brown suffused with purplish red and irrorated with fuscous; a waved grey subbasal line from costa to submedian fold, with some black scales on its edges; antemedial line oblique, waved, defined by grey on inner side and with black point before it on vein 1; orbicular and reniform large, with white annuli and their centres defined by blackish, the former oblique elliptical, its lower extremity touching the latter, which is constricted at middle, then excurved; a waved diffused medial line bent inwards to costa; some blackish beyond the reniform before the postmedial line, which is defined by grey on outer side, oblique from costa to vein 6 and from vein 4 to inner margin, a series of short black streaks on the veins beyond it interrupted by whitish points and some pale points on costa; subterminal line grey, defined by fuscous on inner side, slightly angled outwards at vein 7; a terminal series of small black lunules. Hind wing yellowish white, the veins and marginal areas suffused with fuscous; the underside with the marginal areas irrorated with fuscous, a small discoidal spot and curved postmedial line.

Hab. Jamaica, Cinchona (*Fawcett, Cockerell, Kaye*), 8 ♂, 4 ♀, type. *Exp.* 28 millim.

c. Thorax of male without tufts of scales on pectus.
*a*¹. Abdomen of male thickly clothed with woolly hair.
*a*². Hind wing of male with the inner margin fringed with very long hair.

*1599. Eriopyga brachia.

Eriopyga brachia, de Joan. ined.

♂. Head and thorax red-brown mixed with grey; abdomen grey tinged with rufous, the extremity ferruginous. Fore wing grey suffused with rufous and sparsely irrorated with large black scales; subbasal line indistinct, pale slightly defined by brown, waved from costa to submedian fold, with a small black spot beyond it in cell; antemedial line whitish defined by fuscous on each side, waved; orbicular and reniform large, with brown centres and blackish annuli defined by whitish, the former rather diamond-shaped, touching at middle the latter which is elliptical; postmedial line blackish, defined by whitish on outer side, slightly

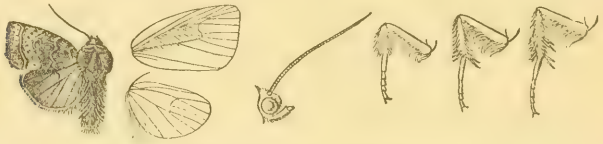


Fig. 75.—*Eriopyga brachia*, ♂. ½.

bent outwards below costa, excurved to vein 4, then strongly incurved, a series of black points beyond it on the veins; subterminal line yellowish, defined on each side by red-brown, very slightly angled outwards at vein 7 and incurved at submedian fold; a terminal series of black points. Hind wing fuscous brown, pale towards base and inner margin; the underside pale, the costal and terminal areas irrorated with brown, a black discoidal lunule and curved punctiform postmedial line.

Hab. Brazil, New Fribourg, Organ Mts. (*Gonnellé*), type † in Coll. de Joannis. *Exp.* 26 millim.

*b*². Hind wing of male with the inner margin normal.
*a*³. Fore wing with the cilia non-crenulate.
*a*⁴. Fore wing with the postmedial line double, sinuous and strongly excurved beyond cell ..... *rhadata.*
*b*⁴. Fore wing with the postmedial line single, minutely dentate and slightly curved..... *crista.*

*1600. Eriopyga rhadata.

Mamestra rhadata, Druce, A. M. N. H. (6) xiii. p. 360 (1894); id. Biol. Centr.-Am., Het. ii. p. 476, pl. 93. f. 12.

♀. Head and thorax very dark brown with slight grey irroration; abdomen fuscous brown. Fore wing dark olive-brown suffused with silvery purple; subbasal line double, waved, from

costa to submedian fold; antemedial line double, oblique, waved; orbicular and reniform defined by olive-brown, the former small, round, the latter constricted at middle; an obscure medial shade angled at middle; postmedial line double, very slightly waved, oblique from costa to vein 6, incurved below vein 4; subterminal line waved, almost obsolete except towards costa, and with a rufous spot beyond it at tornus; cilia tinged with rufous. Hind wing fuscous brown, with the lower part of cell and area below it whitish; cilia with fine white line at base and white tips; the underside with the costal area irrorated with grey, a black discoidal spot and sinuous postmedial line.

Hab. Mexico, Coatepec, Orizaba. *Exp.* 50 millim.

1601. Eriopyga crista.

Mamestra crista, Wlk. ix. 235 (1856).
Agrotis orophila, Druce, Biol. Centr.-Am., Het. i. p. 286 (nec Geyer).
Agrotis obscurus, Dogn. Le Nat. 1889, p. 67.
Mamestra infernalis, Schaus, Trans. Am. Ent. Soc. xxi. p. 227 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 476, pl. 93. f. 11.

Head and thorax fuscous brown, sometimes tinged with purplish or reddish, the hairs tipped with grey; tibiæ ochreous at extremity; abdomen fuscous brown, with a greyish tinge in male. Fore wing

Fig. 76.—*Eriopyga crista*, ♂. ½.

silky purplish brown; traces of a waved subbasal line from costa to submedian fold; an indistinct waved medial line often slightly defined by ochreous on inner side; orbicular and reniform with ochreous annuli slightly defined by black, the former minute or small; postmedial line dentate, usually defined by ochreous on outer side, bent outwards below costa and incurved below vein 4; subterminal line represented by a series of small ochreous marks developed into a spot at tornus, defined by fuscous on inner side, angled outwards at vein 7 and excurved at middle. Hind wing semihyaline whitish, the veins and marginal areas fuscous brown; cilia whitish at tips; the underside with the costal and inner areas brown irrorated with grey, a small discoidal spot and sinuous postmedial line.

Hab. Jamaica, Cinchona (*Kaye*), 1 ♂, 1 ♀; Mexico, Jalapa (*Trujillo*), 1 ♂, Coatepec (*Brooks*), 1 ♀; Costa Rica, Rio Sucio (*Rogers*), 1 ♀, Candalaria Mts. (*Underwood*), 1 ♀, Godman-Salvin

Coll.; Venezuela; Ecuador. *Exp.* 42–50 millim. Types † *crista* in Mus. Oxon., *obscurus* in Coll. Dognin, *infernalis* in Coll. Schaus.

b^3. Fore wing with the cilia crenulate.
  a^4. Fore wing with ochreous points on subterminal line towards tornus ..... *mœsta.*
  b^4. Fore wing with white points on subterminal line towards tornus ..... *niveipuncta.*
  c^4. Fore wing without pale points on subterminal line above tornus ..... *lindigi.*

1602. Eriopyga mœsta.

Næsia mœsta, Wlk. xv. 1742 (1858).
Næsia dolens, Druce, Biol. Centr.-Am., Het. i. p. 266, pl. 26. f. 13 (1889).
Agrotis fornax, Druce, Biol. Centr.-Am., Het. ii. p. 483, pl. 94. f. 7 (1898).

Head and thorax red-brown; metathoracic crest black-brown; tarsi banded with black; abdomen fuscous brown tinged with ochreous at extremity. Fore wing red-brown slightly irrorated with fuscous; a double, waved subbasal line from costa to submedian fold; a double, irregular antemedial line, the two parts wide apart, the outer angled outwards below costa, the inner inwards on vein 1; orbicular small, round, with black centre and

Fig. 77.—*Eriopyga mœsta*, ♂. ½.

rufous annulus defined by black; reniform rufous defined by black, its centre defined by black and filled in with black above and below, two white points on its lower edge near extremity; medial line strong, diffused, oblique from costa to lower angle of cell, then erect; postmedial line minutely dentate, double towards costa, then with double series of black points on rufous streaks on the veins beyond it; the terminal area rather darker below vein 5; a deep red subterminal line angled outwards at vein 7 and excurved at middle, with an ochreous spot on it at tornus; a terminal series of small black lunules; cilia rufous, with a fine ochreous line at base. Hind wing dark brown; the cilia ochreous, with brown line through them; the underside pale ochreous irrorated with brown and the terminal area suffused with brown, a discoidal lunule and sinuous postmedial line.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♀ type *fornax*; Costa Rica, Irazu (*Rogers*), 1 ♂ type *dolens*, Godman-Salvin Coll.; Venezuela, type † ♂ in Mus. Oxon. *Exp.* 50 millim.

1603. Eriopyga niveipuncta. (Plate LXXXVII. fig. 17.)

Mamestra niveipuncta, Schaus, Trans. Am. Ent. Soc. xxi. p. 228 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 476.

Head, thorax, and abdomen dark red-brown; tarsi with pale rings. Fore wing red-brown; a waved subbasal line from costa to submedian fold; a waved antemedial line; orbicular and reniform very indistinctly defined by blackish, the former round, the latter with dull fiery-red centre; a medial shade bent inwards to costa; postmedial line minutely dentate and produced to pale streaks on the veins, with two series of black points on them, slightly bent outwards below costa, excurved to vein 4, then incurved, some ochreous points beyond it on costa; subterminal line represented by a series of small blackish spots and a white spot near tornus, angled outwards at vein 7 and excurved at middle; a fine white line at base of cilia. Hind wing dark reddish brown, the interspaces of basal half pale; cilia with fine white line at base and pale tips; the underside whitish, the costal and terminal areas brown irrorated with ochreous, a discoidal lunule and sinuous postmedial line.

Hab. Mexico, Jalapa, type † ♂ in Coll. Schaus; Panama, Chiriqui, 1 ♀. *Exp.* 44 millim.

*1604. Eriopyga lindigi.

Leucania lindigi, Feld. Reis. Nov. pl. 109. f. 11 (1874).

♂. Head and thorax ochreous brown; abdomen fuscous, the anal tuft and ventral surface ochreous. Fore wing ochreous brown, slightly irrorated with fuscous; the veins of terminal area slightly defined by fuscous and the interspaces streaked with fuscous; subbasal line represented by a black point in cell; antemedial line indistinct, waved, somewhat oblique, angled inwards on the veins, where there are black points; orbicular and reniform with fuscous centres and surrounded by black points; postmedial line dentate and produced to black points on the veins, bent outwards below costa, excurved to vein 4, then incurved; subterminal line represented by a series of short black streaks; a terminal series of black points. Hind wing fuscous; the cilia ochreous, with a fuscous line through them; the underside greyish ochreous tinged with fuscous, especially on the inner and terminal areas; a discoidal spot and sinuous postmedial line, with short black streaks at the veins.

Hab. Colombia, Bogota, type † ♂ in Coll. Rothschild. *Exp.* 58 millim.

b^1. Abdomen of male with lateral fringes of long hair meeting on ventral surface.

a^2. Fore wing of male on underside with the cell thickly clothed with downturned hair.

1605. Eriopyga subolivacea, n. sp.

♂. Head and thorax pale greenish ochreous; palpi reddish.

tinged with fuscous at sides; pectus reddish; legs grey-brown, the spurs whitish at sides; abdomen dorsally fuscous, the lateral tufts pinkish, the anal tuft and ventral surface ochreous. Fore wing greenish ochreous, with slight dark irroration on costal, inner, and terminal areas; a subbasal black point in cell and slight antemedial points on median nervure and vein 1; a postmedial series of

Fig. 78.—*Eriopyga subolivacea*, ♂. ½.

points excurved from costa to vein 6, then incurved; traces of a similar subterminal series almost obsolete except towards costa. Hind wing ochreous white, tinged with brown on costal and terminal areas; the underside with slight brown irroration on costal area, a small discoidal spot.

Hab. Brazil, Rio Janeiro, 1 ♂ type. *Exp.* 36 millim.

b^2. (*Hypotrix*). Fore wing of male on underside with the cell not clothed with downturned hair.
  a^3. Fore wing with black spots on inner side of subterminal line..... *melanosticta.*
  b^3. Fore wing without black spots on inner side of subterminal line.
    a^4. Fore wing with the orbicular and reniform filled in with black and connected at lower extremities ..... *purpurigera.*
    b^4. Fore wing with the orbicular and reniform not connected, the former not filled in with black, the latter in lower part only..... *nigripars.*

1606. **Eriopyga melanosticta**, n. sp. (Plate LXXXVII. fig. 18.)

♂. Head and thorax pale purplish brown; abdomen fuscous mixed with ochreous, the anal tufts ochreous mixed with purplish, the tufts on coxæ and abdomen purple. Fore wing purplish brown irrorated with fuscous; an indistinct dark subbasal line from costa to submedian fold; antemedial line indistinct, double, curved; claviform and orbicular obsolete; reniform defined by a few white scales on a diffused red-brown patch; medial shade excurved from costa to submedian fold, where it is angled inwards; postmedial line double, the lines well separated, the inner minutely waved, excurved from costa to vein 4, then oblique; subterminal line fine, whitish, defined on inner side by small dentate black marks from below costa to vein 3, with more prominent spots above and below vein 5, slightly angled outwards at vein 7; termen crenulate, with a fine pale line at base of cilia. Hind wing yellowish white; the veins and marginal areas suffused

with brown; the cilia purplish red; the underside with the marginal areas irrorated with brown, a black discoidal spot and curved postmedial line.

Hab. Brazil, 1 ♂; Paraguay, Sapucay (*Foster*), 1 ♂ type. *Exp.* 46 millim.

1607. Eriopyga purpurigera.

Hypotrix purpurigera, Guen. Noct. i. p. 369 (1852).

♀. Head and thorax grey mixed with dark brown, the tegulæ slightly tinged with purple; palpi fuscous at sides; abdomen fuscous, the anal tuft ochreous. Fore wing grey-white, slightly tinged with olive-brown and purplish and irrorated with black; subbasal line represented by a black striga from costa and point on median nervure, with a short streak in cell beyond it; antemedial line double, waved, excurved, ill-defined; orbicular and reniform chocolate defined by black, the former elongate, oblique, pointed at extremity and touching the latter, which is oblique, narrow, and angled inwards on median nervure; a dark medial shade oblique

Fig. 79.—*Eriopyga purpurigera*, ♂. ½.

from lower angle of cell to inner margin; postmedial line represented by a spot at costa, then by a series of points, bent outwards below costa, excurved to vein 4, then incurved; subterminal line commencing as an oblique black streak from apex, then double, brown, excurved at middle; a terminal series of black points. Hind wing greyish, suffused with fuscous brown, especially towards termen; cilia ochreous, with some fuscous towards apex; the underside yellowish white, the costal area irrorated with brown, a small discoidal spot, sinuous postmedial line, and terminal series of points.

♂. Head, thorax, and fore wing strongly suffused with purple-red; orbicular and reniform black, the former smaller and not touching latter.

Hab. Brazil, Castro Paraña, 1 ♂. *Exp.* 26–32 millim. Type † in Coll. Oberthür.

1608. Eriopyga nigripars. (Plate LXXXVII. fig. 19.)

Himella nigripars, Schaus, J. N.Y. Ent. Soc. xi. p. 231 (1903).

♂. Head and thorax brownish ochreous, palpi blackish at sides, metathorax with a vinous tinge; abdomen fuscous, the lateral

fringes very thick and ochreous; pectus and legs ochreous. Fore wing ochreous with a vinous tinge; traces of a subbasal line from costa to submedian fold and of an oblique, waved antemedial line; a medial line oblique and blackish from costa to lower angle of cell, then less distinct and inwardly oblique; reniform large, with slight ochreous annulus, its upper part with two black spots connected by a curved black line, its lower part filled in with black; postmedial line indistinct, dentate and produced to black points on the veins, bent outwards below costa, excurved to vein 4, then oblique; subterminal line ochreous, with a series of black points on inner side, very slightly angled outwards at vein 7, then oblique; a terminal series of black points. Hind wing fuscous brown, with a hyaline streak below the cell; cilia ochreous; the underside ochreous slightly irrorated with fuscous, a black discoidal point and terminal series from apex to vein 2.

♀ more strongly tinged with purple-red on upper and under sides; hind wing with the cilia purple-red.

Hab. Mexico, Jalapa, 1 ♀; Costa Rica, type † ♂ in Coll. Schaus; Ecuador, Balzapamba (*M. de Mathan*), 1 ♂. *Exp.* 36 millim.

c^1. (*Eriopyga*). Abdomen of made dilated at extremity and with very large expansible genital tufts.
  a^2. Fore wing tinged with rufous.
    a^3. Fore wing with white points round upper and outer edge of reniform ..... *ditissima.*
    b^3. Fore wing with white points at lower extremity of reniform only.
      a^4. Fore wing without white spot above tornus.
        a^5. Fore wing with the medial area suffused with fuscous on costal half..... *janeira.*
        b^5. Fore wing without fuscous suffusion on medial area ..... *punctula.*
      b^4. Fore wing with white spot above tornus ..... *monilis.*
  b^2. Fore wing pale olive-grey-brown ..... *glaucistis.*
  c^2. Fore wing dark fuscous brown ..... *azucara.*

1609. Eriopyga ditissima.

Gortyna ditissima, Wlk. xi. 716 (1857); Druce, Biol. Centr.-Amer., Het. i. p. 265, pl. 26. f. 9.

Head and thorax red-brown, the scales tipped with grey, the patagia suffused with purple-pink; pectus with tuft of large black scales in male behind the fore legs; abdomen fuscous brown, paler ventrally. Fore wing orange-yellow, thickly irrorated with fiery red, suffused with greyish brown on inner area from before middle, on greater part of postmedial area and on terminal area; a waved brown subbasal line from costa to vein 1; a double, oblique, waved antemedial line; orbicular and reniform defined by black, the former round, the latter constricted at middle, and with pure white punctiform line inside the black outline except on lower part of inner side; a medial blackish line obtusely angled at middle; postmedial line highly dentate and produced to points on the veins, bent

outwards below costa, excurved to vein 4, then oblique, some yellow points beyond it on costa; subterminal line indistinct, brown, dentate, angled outwards at vein 7 and slightly excurved at middle, defined by yellow and red on outer side. Hind wing whitish, the veins and marginal areas suffused with brown; the underside with

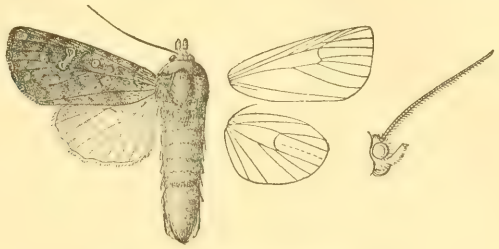


Fig. 80.—*Eriopyga ditissima*, ♂. ½.

the costal and terminal areas irrorated with brown, a discoidal point and postmedial punctiform line.

Hab. Mexico (*Sallé*), 1 ♀ type; Guatemala, V. de Atitlan, Las Mercedes (*Champion*), 2 ♂, Godman-Salvin Coll. *Exp.* 46 millim.

1610. **Eriopyga janeira.** (Plate LXXXVII. fig. 20.)

Mamestra janeira, Schaus, J. N.Y. Ent. Soc. vi. p. 111 (1898).

♂. Head and thorax dark brown, the scales tipped with ochreous; abdomen fuscous brown. Fore wing rufous, suffused with fuscous brown except the submedian area and part of postmedial area; an indistinct waved subbasal line from costa to submedian fold; an indistinct waved antemedial line; orbicular indistinctly defined by black at sides; reniform indistinctly defined, its upper part filled in with rufous, its lower with fuscous, and with a white point on its outer edge; a medial shade from lower angle of cell to inner margin; postmedial line hardly traceable, dentate, bent outwards below costa, incurved at discal and submedian folds; subterminal line represented by a series of obscure rufous and blackish spots in the interspaces, angled outwards at vein 7 and slightly excurved at middle; an obscure rufous apical patch; a fine pale line at base of cilia. Hind wing fuscous brown; the cilia ochreous with a brown line through them; the underside ochreous irrorated with dark brown, a dark discoidal lunule and sinuous postmedial line.

Hab. Brazil, Rio Janeiro, 1 ♂. *Exp.* 40 millim. Type † ♂ in Coll. Schaus.

1611. **Eriopyga punctula.** (Plate LXXXVII. fig. 21.)

Eriopyga punctulum, Guen. Noct. i. p. 203 (1852).
Mamestra desnuda, Dogn. Ann. Soc. Ent. Belge, xli. p. 408 (1897).

♂. Head and thorax ochreous tinged with rufous; palpi at sides

and fore legs in front blackish; mid and hind tibiæ with black spots at extremity; abdomen ochreous, dorsally tinged with fuscous except at extremity. Fore wing ochreous, suffused with rufous and sparsely irrorated with black; subbasal line blackish, waved, from costa to submedian fold; antemedial line double, waved, indistinct; orbicular a small ill-defined blackish spot; reniform with its upper part very ill-defined, yellowish, its lower part fuscous with two white points on its outer edge; traces of a medial shade, oblique from costa to lower angle of cell; postmedial line indistinct, dentate and produced to points on the veins, bent outwards below costa and incurved at discal and submedian folds; traces of a subterminal yellow line with some black points on it in the interspaces, angled outwards at vein 7 and excurved at middle, the veins beyond it with diffused fuscous streaks; cilia fuscous, yellowish at base. Hind wing ochreous white tinged with fuscous, the cilia ochreous; the underside ochreous, the costal area irrorated with fuscous, a discoidal point and curved postmedial punctiform line.

Ab. 1. *desnuda*: browner.—Ecuador.

Hab. Ecuador, type † *desnuda* in Coll. Dognin; Brazil, Rio Janeiro, 3 ♂. *Exp.* 42 millim.

1612. Eriopyga monilis.

Hadena monilis, Guen. Noct. ii. p. 102 (1852).
Mamestra dotata, Druce, Biol. Centr.-Amer., Het. i. p. 273, pl. 26. f. 1 (1889).
Mamestra trocas, Schaus, J. N. Y. Ent. Soc. vi. p. 111 (1898).

Head and thorax rufous; tarsi ringed with white; abdomen ochreous, dorsally tinged with fuscous. Fore wing rufous with a purplish tinge; traces of a waved subbasal line from costa to submedian fold; an irregular antemedial line bent inwards in cell and angled inwards on vein 1; orbicular small, round, incompletely defined by black and with two white points on its upper edge; reniform constricted at middle, with ochreous centre irrorated with black and white annulus incompletely defined by black; a diffused fuscous medial waved line oblique from costa to median nervure, where it is angled; postmedial line formed by a series of rather ill-defined black lunules, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, a series of black points beyond it on the veins and some white points on the costa; subterminal line represented by a series of black spots with white points on them and a larger spot above tornus, angled outwards at vein 7 and slightly excurved at middle; a fine whitish line at base of cilia. Hind wing whitish, the veins and marginal areas tinged with brown or wholly brown; cilia pale yellow; the underside with the costal area irrorated with brown.

Ab. 1. *trocas*: rather browner and less red.—Castro Paraña.

Hab. Mexico, Jalapa (*Schaus*); Guatemala, Atitlan, Mercedes (*Champion*), 1 ♂, 1 ♀, type; Costa Rica (*Underwood*), 1 ♂;

Panama, Chiriqui (*Ribbé*, *Champion*), 1 ♂, 1 ♀, Godman-Salvin Coll.; Brazil, São Paulo, Castro Paraña, type † ♀ *trocas* in Coll. Schaus; Paraguay, Sapucay (*Foster*), 1 ♀. *Exp.* 40–44 millim.

1613. **Eriopyga glaucistis**, n. sp. (Plate LXXXVII. fig. 22.)

♂. Head and thorax grey-brown tinged with fuscous; palpi black at sides; fore coxæ with tufts of fulvous-yellow hair; abdomen fuscous brown above, grey below. Fore wing grey-brown; traces of a waved subbasal line from costa to submedian fold; a fine antemedial line, excurved below median nervure, then slightly angled inwards on vein 1; orbicular defined by a faint pale annulus, round; reniform with its centre irrorated with black and a fine whitish annulus defined by black; a diffused medial shade oblique from costa to lower angle of cell, then somewhat incurved; the postmedial line fine, minutely waved, oblique from costa to vein 7, incurved below vein 4, a series of points on the veins beyond it; subterminal line indistinct, pale, defined by black marks on inner side, becoming more prominent patches at costa, discal and submedian folds; a terminal series of black points. Hind wing ochreous, uniformly suffused with fuscous brown; the underside ochreous, the marginal areas irrorated with brown, a discoidal lunule and curved postmedial line.

Hab. Brazil, Petropolis (*Doer*), 1 ♂ type. *Exp.* 40 millim.

*1614. **Eriopyga azucara**. (Plate LXXXVII. fig. 23.)

Mamestra azucara, Schaus, J. N.Y. Ent. Soc. xi. p. 235 (1903).

♀. Head and tegulæ ochreous slightly mixed with fuscous brown; sides of palpi and frons fuscous; thorax fuscous brown, the scales with pale tips; abdomen fuscous brown. Fore wing ochreous, thickly irrorated and suffused with fuscous brown; traces of a double, waved subbasal line from costa to submedian fold; an oblique, waved antemedial line; orbicular and reniform with fuscous centres and ochreous annuli defined by fuscous, the former elliptical, somewhat oblique, the latter constricted at middle and with white points on its outer lower extremity; an obscure medial shade; postmedial line indistinct, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved, some ochreous points beyond it on costa; subterminal line represented by a very indistinct series of small ochreous and fuscous dentate marks; some blackish points on termen. Hind wing fuscous brown; the cilia ochreous with a brown line through them; the underside greyish irrorated with fuscous, a dark discoidal lunule and sinuous postmedial line.

Hab. Brazil, São Paulo, type † ♀ in Coll. Schaus. *Exp.* 38 millim.

d^1. Abdomen of male with large downcurved tufts of hair at extremity meeting ventrally; fore wing on underside with fringe of long hair on costa from base to beyond middle, the cell and area just beyond it clothed with long downcurved hair; the costa slightly lobed at base; hind wing clothed with rough hair to middle.

1615. Eriopyga lobata, n. sp.

Dryobota agnata, Druce, Biol. Centr.-Amer., Het. i. p. 287 (part.), nec Feld.

Head and thorax purplish brown, the scales slightly tipped with grey; pectus mostly clothed with ochreous hair; legs banded with black; abdomen fuscous, the tufts on claspers of male ochreous whitish. Fore wing yellowish brown suffused with fuscous; a slight pale subbasal line from costa to submedian fold; antemedial line double, filled in with ochreous, angled outwards below costa, then oblique and slightly waved; orbicular and reniform with reddish centres and whitish annuli, the former small, oblique elliptical, the latter with some fuscous in its lower part and angled inwards on median nervure; an indistinct waved medial line; postmedial line double, filled in with ochreous, bent outwards below

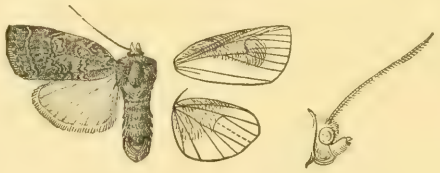


Fig. 81.—*Eriopyga lobata*, ♂. ½.

costa, somewhat incurved at discal fold, then oblique and minutely dentate, a series of short black streaks interrupted by grey points on the veins beyond it and some pale points on costa; subterminal line pale reddish, defined by fuscous on inner side, slightly angled outwards at vein 7, then oblique; a terminal series of black points. Hind wing brown with an ochreous tinge; the cilia pale with a brown line through them; the underside pale, the costal and terminal areas irrorated with brown, a discoidal point and curved postmedial line.

Hab. Costa Rica, Irazu, 6000′ (*Rogers*), 1 ♂, 1 ♀, type Godman-Salvin Coll. *Exp.* 34 millim.

e^1. Abdomen of male with the claspers and anal tuft very long.

a^2. Fore wing of male on underside with moderate fringe of hair from base of costa, the cell and area below it clothed with silky downturned hair; hind wing with some long hair at base.

a^3. Fore wing with dentate black marks before subterminal line . . . . . *mesostrigata*.

b^3. Fore wing without dentate black marks before subterminal line . . . . . *cyanea*.

1616. **Eriopyga mesostrigata**, n. sp. (Plate LXXXVII. fig. 24.)

Dryobota agnata, Druce, Biol. Centr.-Amer., Het. i. p. 287 (part.), nec Feld.

Head and tegulæ ochreous or rufous mixed with some black, palpi and frons black-brown, the tegulæ with dark line near tips; thorax dark red-brown; tarsi with pale rings; abdomen fuscous brown, the anal tufts ochreous. Fore wing reddish brown suffused with purplish fuscous; the subbasal line double, waved, from costa to submedial fold, the antemedial line double, waved, dentate inwards on subcostal and median nervures, on submedian fold and on vein 1; the medial costal area pale rufous with dark streaks on the veins; the orbicular and reniform small with slight ochreous annuli, the former round, the latter with its upper extremity produced; an indistinct waved medial line bent inwards to costa; postmedial line double, slightly bent outwards below costa, incurved at discal fold, incurved and dentate below vein 4, some short black streaks interrupted by pale points beyond it on the veins and in submedian fold and some pale points on costa; subterminal line represented by a series of small brown spots with small dentate black marks or short streaks on their inner sides and some scales or slight streaks beyond them; a terminal series of small black lunules. Hind wing fuscous brown with an ochreous tinge; cilia ochreous with a brown line through them; the underside ochreous whitish, the costal area irrorated and suffused with brown, a slight discoidal spot and curved postmedial line.

Hab. Guatemala, Cerro Zunil, 4000′ (*Champion*), 1 ♂ type; Panama, Chiriqui (*Champion*), 1 ♂, 2 ♀. *Exp.* 34–36 millim.

1617. Eriopyga cynica.

Orthodes cynica, Guen. Noct. i. p. 375 (1852); Smith, Cat. Noct. N. Am. p. 198.
Orthodes nimia, Guen. Noct. i. p. 376 (1852).
Orthodes candens, Guen. Noct. i. p. 376 (1852).
Orthosia tecta, Wlk. xxxiii. 714 (1865).

Head and thorax fuscous brown; neck with an ochreous tinge;

Fig. 82.—*Eriopyga cynica*, ♂. ½.

tarsi with pale rings; abdomen ochreous suffused with fuscous except anal tuft. Fore wing fuscous brown more or less strongly tinged with purplish; subbasal line blackish, from costa to submedian fold; antemedial line black, defined by grey on inner side, oblique, waved; orbicular and reniform large, slightly defined by

whitish, the former oblique elliptical; medial line sinuous, oblique from costa to median nervure; postmedial line defined by grey on outer side, oblique from costa to vein 7, then nearly erect, sinuous and with short streaks on the veins beyond it; subterminal line grey, defined by fuscous on inner side, slightly angled outwards at vein 7; a terminal series of blackish points. Hind wing fuscous brown, whitish towards base; cilia grey with a brown line through them; the underside yellowish white, the costal and terminal areas irrorated with fuscous, a small discoidal spot and diffused curved postmedial line.

Ab. 1. *candens*. Head, thorax, and fore wing suffused with purple-red, the pale markings rather more distinct.

Ab. 2. *nimia*. Pale grey-brown, the pale markings very prominent.

Hab. CANADA, Nova Scotia; U.S.A., N. and Centr. States, 7 ♂, 1 ♀, type and types *nimia*, *candens*, and *tecta*, New York, Evan's Centre (*Grote*), 5 ♂, 1 ♀, Trenton Falls (*Doubleday*), 1 ♂, Pennsylvania, Sharon (*Meske*), 1 ♂, Wisconsin, Racine (*Westcott*), 1 ♂, Colorado. *Exp.* 32–38 millim.

b^2. Fore wing of male on underside with slight fringe of hair from costa, the cell only clothed with down-turned hair; hind wing with some long hair at base.	
a^3. Fore wing with the reniform large, not angled inwards on median nervure.	
a^4. Thorax with black spot at base of tegulæ	*curvirena.*
b^4. Thorax without black spot at base of tegulæ ...	*intractata.*
b^3. Fore wing with the reniform narrow, produced above and angled inwards on median nervure...	*goniostigma.*

1618. Eriopyga curvirena.

Orthodes curvirena, Guen. Noct. i. p. 374, pl. 5. f. 12 (1852).

Head and thorax grey-brown; palpi at sides and frons black;

Fig. 83.—*Eriopyga curvirena*, ♂. ½.

tegulæ with small dorsal black spot at base; abdomen fuscous brown, the anal tuft ochreous, the ventral surface greyer. Fore wing grey-brown with a slight reddish tinge; a pale subbasal line from costa to vein 1 with black points on each side of it: antemedial line whitish, defined on each by brown, with short black streaks before it on the veins interrupted by white points, and black striæ beyond it in and below cell; orbicular and reniform very large,

nearly or quite touching, their centres slightly defined by black, the former oblique elliptical; an indistinct diffused medial line, the veins beyond the reniform grey, with black between them to the postmedial line, which is pale, oblique from costa to vein 6, then inwardly oblique, with a series of short black streaks interrupted by white points beyond it on the veins and some pale points on costa; subterminal line pale ochreous, slightly defined by brown on inner side, and very slightly bent outwards at vein 7; a terminal series of black points defined by a pale crenulate line. Hind wing fuscous brown, darker in female, the cilia pale; the underside whitish irrorated with brown, a dark discoidal lunule and curved postmedial line, some rufous hair at base in male.

Hab. Brazil, New Fribourg, type ♂ in Coll. Oberthür, Rio Janeiro, 3 ♂, São Paulo (*D. Jones*), 1 ♀; Paraguay, Sapucay (*Foster*), 2 ♂, 2 ♀. *Exp.* 32 millim.

Subsp. *spurciliuea*. Wlk. xv. 1709 (1867).

Orthodes infirma, Druce, Biol. Centr.-Amer., Het. i. p. 289 (nec Guen.).

♂ without the rufous hair on underside of fore wing.

Hab. Mexico, Coatepec (*Brooks*), 1 ♂, 2 ♀, Jalapa (*Trujillo*), 1 ♀; Guatemala (*Champion*), 1 ♂, 1 ♀; Costa Rica (*Rogers, Underwood*), 3 ♂, 3 ♀ type, Godman-Salvin Coll.; Venezuela, 2 ♂ type.

1619. Eriopyga intractata. (Plate LXXXVII. fig. 25.)

Tæniocampa intractata, Morr. Proc. Bost. Soc. N. H. xvii. p. 160 (1874); Smith, Cat. Noct. N. Am. p. 201.

Himella fidelis, Grote, Proc. Ac. Nat. Sci. Phil. 1874, p. 201.

Head, thorax, and abdomen grey mixed with brown; palpi black at sides; tarsi with black bands; anal tuft ochreous. Fore wing grey, irrorated with brown and with slight purplish suffusion; the veins with grey streaks; the subbasal line represented by small black spots below costa and cell; antemedial line indistinct, pale, oblique from costa to just below cell, then erect, with slight black marks on its outer edge, in and below cell: orbicular and reniform large with fine whitish annuli, the former round, the latter elliptical; postmedial line indistinct, pale, bent outwards below costa, excurved to vein 4, then incurved, and with slight black mark on its inner side below vein 2, some pale points beyond it on costa; subterminal line whitish, angled outwards at vein 7 and excurved at middle. Hind wing white, irrorated with brown and suffused with brown towards termen; cilia white with brown line through them; the underside with discoidal spot and traces of postmedial line.

Hab. U.S.A. (*Meske*), 1 ♂ type *fidelis*, Massachusetts, New York, Illinois, Missouri. *Exp.* 34 millim.

1620. Eriopyga goniostigma. (Plate LXXXVII. fig. 26.)

Himella goniostigma, Schaus, J. N.Y. Ent. Soc. xi. p. 233 (1903).

♂. Head and tegulæ ochreous, palpi black except at tip, some

purplish red and black on vertex of head; thorax purplish red mixed with dark brown, metathoracic crest black; tarsi banded with black; abdomen ochreous, irrorated with black on dorsal surface. Fore wing purplish pink; a double, waved subbasal black line from costa to submedian fold; the antemedial area ochreous except towards costa and inner margin; antemedial line double, arising from small black points on costa, oblique to median nervure, incurved in submedian interspace, angled outwards above inner margin, and with double black points before it on median nervure and vein 1; the cell ochreous on medial area; orbicular and reniform dark chocolate with ochreous annuli defined by brown, the former small, oblique oblong, the latter produced to a point at upper extremity and angled inwards on median nervure; a waved medial line; postmedial line double, produced to black and grey points on the veins, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4; subterminal line ochreous, defined on inner side by minute somewhat dentate rufous marks with an ochreous band before them, the area beyond them fuscous brown with rufous streaks on the veins, the line slightly excurved between veins 7 and 2; a terminal series of black points. Hind wing ochreous white, suffused with fuscous brown on costal and terminal areas; the cilia ochreous; the underside whitish, the costal and terminal areas irrorated with brown, a small discoidal spot and sinuous postmedial line.

Hab. Mexico, Guadalajara, 1 ♂, type † ♂ in Coll. Schaus. *Exp.* 30 millim.

c^2. Fore wing of male on underside without downturned hair in cell.

a^3. Hind wing of male on underside with the basal area clothed and the inner margin fringed with long hair and spatulate scales.

1621. Eriopyga albipuncta.

Orthodes albipuncta, Schaus, Trans. Am. Ent. Soc, xxi. p. 237 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 485.

♂. Head and thorax dark brown; tegulæ ochreous in front;

Fig. 84.—*Eriopyga albipuncta*, ♂. ½.

pectus mostly ochreous; tibiæ and tarsi black ringed with ochreous; abdomen ochreous suffused with fuscous, the anal tuft ochreous, the ventral surface rufous irrorated with brown. Fore wing brown

suffused with purplish grey and red; a waved black subbasal line from costa to submedian fold; a rather indistinct waved black antemedial line; orbicular and reniform small, incompletely defined by black, the former purplish red, round, the latter whitish; traces of an irregular medial shade oblique from costa to lower angle of cell; postmedial line black, outwardly oblique from costa to vein 6, then inwardly oblique, dentate and produced to points on the veins, some rufous points beyond it on costa; subterminal line represented by a series of slight black and ochreous streaks; terminal area rather redder. Hind wing yellowish suffused with dark brown; the cilia pale with a dark line through them; the underside yellowish, irrorated with fuscous on costal and terminal areas, and the costal area suffused with purplish pink, a black discoidal spot and sinuous postmedial line.

Hab. Mexico, Coatepec, 1 ♂, type † ♂ in Coll. Schaus. *Exp.* 30 millim.

*b*³. Hind wing of male on underside normal.

1622. Eriopyga dyschoroides.

Hadena dyschoroides, Schaus, J. N.Y. Ent. Soc. vi. p. 142 (1898); Druce, Biol. Centr.-Am., Het. ii. p. 568.

Head and thorax purplish red mixed with some dark brown; tarsi with dark bands; abdomen fuscous above, greyish below, the anal tuft in male ochreous and very long, the claspers very long and with silky yellow scales at extremity. Fore wing pale rufous suffused with purplish red; the costa dark brown; subbasal line double, waved, from costa to submedian fold; antemedial line

Fig. 85.—*Eriopyga dyschoroides*, ♂. ½.

double, oblique, waved, angled inwards in cell and on vein 1; orbicular and reniform small, indistinctly defined, the former purplish red, round, the latter with its lower part filled in with blackish, and an orange-yellow spot with white point below it on outer side; a medial brown shade expanding into a patch in cell; postmedial line very close to reniform, very minutely dentate and with a series of black points beyond it on the veins, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line pale rufous defined by brown on inner side, the area beyond it fuscous except at apex, angled outwards at vein 7, excurved at middle and bent outwards to tornus; a terminal series of black points; cilia pale pinkish with two brown lines through them. Hind wing fuscous brown; the cilia pale

pinkish with a fuscous line near base; the underside whitish tinged with purplish pink and irrorated with black, a black discoidal spot and minutely waved postmedial line.

Hab. Mexico, Jalapa, 1 ♂, Orizaba, type † in Coll. Schaus. *Exp.* 24 millim.

f^1. Abdomen of male normal.

a^2. Fore wing of male on underside with fringe of long downturned hair on costa from near base to beyond middle, a fringe of short upturned hair below median nervure and a curved fringe of long hair below vein 3 to near termen; hind wing with fringe of downturned hair on costal area to beyond middle, a slight fringe of upturned hair on median nervure and bases of veins 2, 3, 4.

*1623. Eriopyga rubripuncta.

Himella rubripuncta, Schaus, J. N.Y. Ent. Soc. xi. p. 232 (1903).

♂. Head and thorax chestnut-red; palpi, pectus, and legs brownish ochreous; abdomen fuscous, the anal tuft and ventral surface ochreous. Fore wing chestnut-red; an indistinct waved subbasal line from costa to submedian fold; an oblique waved antemedial line; orbicular absent; reniform a small vermilion-red lunule; an indistinct waved medial line; postmedial line dentate and produced to points on the veins, slightly bent outwards below

Fig. 86.—*Eriopyga rubripuncta*, ♂. ½.

costa and incurved below vein 4; subterminal line defined by a series of small dentate dark marks on inner side, slightly angled outwards at vein 7 and excurved at middle, a fine whitish line at base of cilia. Hind wing fuscous brown, the cilia with fine white line at base. The underside with the hair ochreous; hind wing whitish irrorated with brown, a black discoidal spot and sinuous postmedial line.

Hab. Mexico, Orizaba, type † ♂ in Coll. Schaus. *Exp.* 30 millim.

b^2. Fore wing of male on underside with fringe of very long hair from costa to beyond middle, the cell clothed with loose downturned hair; hind wing clothed with rough hair to beyond middle.

1624. Eriopyga confluens, n. sp.

Dryobota agnata, Druce, Biol. Centr.-Am., Het. i. p. 287 (part.), nec Feld.

♂. Head and thorax ochreous mixed with some black; thorax

black-brown; pectus clothed with ochreous hair; legs banded with black; abdomen fuscous, the anal tuft and ventral surface ochreous. Fore wing black-brown suffused with silvery purple; a black streak in base of submedian fold, the cell blackish and with black streaks in bases of interspaces arising from it: subbasal line double, filled in with rufous, waved, from costa to submedian fold; antemedial line double filled in with rufous, waved and dentate inwards at the

Fig. 87.—*Eriopyga confluens*, ♂. ½.

veins; orbicular and reniform rather small, fuscous with reddish annuli, their lower parts connected by a fuscous fascia; postmedial line double filled in with rufous, strongly dentate, bent outwards below costa and oblique below vein 5; subterminal line rufous defined on inner side by somewhat dentate black marks, the area beyond it fuscous with diffused rufous streaks on the veins. Hind wing yellowish brown; a fine pale line at base of cilia; the underside with the basal half of costal area suffused with ochreous.

Hab. Guatemala, Totonicapam 10,000′ (*Champion*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 34 millim.

c^2. Fore wing of male on underside with the cell clothed with long sparse downturned hair.
  a^3. Fore wing with the postmedial line oblique below vein 6 ..... *infirma*.
  b^3. Fore wing with the postmedial line incurved from below costa to inner margin ..... *violascens*.
c^3. Fore wing with the postmedial line excurved to vein 4, then incurved.
  a^4. Fore wing with the reniform angled inwards on median nervure ..... *rupilla*.
  b^4. Fore wing with the reniform not angled inwards on median nervure.
    a^5. Fore wing with the reniform small and narrow.
      a^6. Fore wing with small dentate black marks before subterminal line.
        a^7. Fore wing with the veins irrorated with whitish ..... *irrorata*.
        b^7. Fore wing with the veins not irrorated with whitish ..... *virgula*.
      b^6. Fore wing without dentate black marks before subterminal line.
        a^7. Fore wing with the reniform suffused with brick-red except below.
          a^8. Head and thorax dark brown ..... *pyrrhus*.
          b^8. Head and thorax purplish red-brown ..... *igneus*.

b^7. Fore wing without red on reniform.
a^8. Fore wing with the costal edge whitish ..... *iole.*
b^8. Fore wing with the costal edge not whitish.
a^9. Fore wing reddish or grey-brown with a purplish tinge ..... *vecors.*
b^9. Fore wing reddish or grey-brown with an ochreous tinge..... *puerilis.*
b^5. Fore wing with the reniform large, kidney-shaped.
a^6. Fore wing bright rufous.
a^7. Fore wing with the markings not defined by grey..... *rubor.*
b^7. Fore wing with the markings defined by grey ..... *leucopera.*
b^6. Fore wing dark brown, with whitish postmedial band and black spot in discal fold before subterminal line..... *marginalis.*

1625. Eriopyga infirma.

Orthodes infirma, Guen. Noct. i. p. 375 (1852).

♂. Head and thorax grey with a slight rufous tinge; tegulæ with a small dorsal black spot at base; abdomen grey, the anal tuft ochreous. Fore wing pale grey-brown; an indistinct pale waved subbasal line from costa to submedian fold: antemedial line indistinct, defined by grey on inner side, oblique, waved; orbicular and reniform with pale annuli, large, oblique elliptical; an indistinct dark medial line oblique from costa to below cell; postmedial line defined by grey on outer side, oblique from costa to vein 6, then nearly erect and slightly sinuous, a series of short blackish streaks interrupted by white points on the veins beyond it; subterminal line pale, very slightly bent outwards at vein 7, then straight; a terminal series of black points. Hind wing white, the veins and terminal area tinged with brown, a discoidal point and indistinct curved postmedial line.

Fig. 88.—*Eriopyga infirma*, ♂. ½.

♀ much browner; the hind wing brown.

Hab. Brazil, New Fribourg, type † ♂ in Coll. Oberthür, Rio Janeiro, 1 ♂, 1 ♀; Paraguay, Sapucay (*Foster*), 1 ♂. *Exp.* 32 millim.

*1626. Eriopyga violascens. (Plate LXXXVII. fig. 27.)

Himella violascens, Schaus, J. N.Y. Ent. Soc. xi. p. 234 (1903).

♀. Head and thorax pale purplish; abdomen fuscous, the anal tuft and ventral surface pinkish. Fore wing pale purplish pink

with some darker irroration; a fuscous point in cell near base; an ill-defined double, minutely waved antemedial line from cell to inner margin; orbicular and reniform dark red-brown slightly defined by white scales, the former elliptical, the latter rather constricted at middle; a somewhat waved medial line from cell to inner margin; postmedial line double, with short streaks beyond it on the veins, bent outwards below costa and incurved below vein 4; subterminal line fine, white, minutely dentate, on a brown band; a fine terminal line. Hind wing white, the terminal half tinged with brown; cilia ochreous; the underside with the costal area tinged with pink and irrorated with brown, a discoidal point and slight postmedial line on costal area.

Hab. Mexico, Guadalajara, type † ♀ in Coll. Schaus. *Exp.* 36 millim.

*1627. Eriopyga ropilla. (Plate LXXXVII. fig. 28.)

Celæna ropilla, Dogn. Ann. Soc. Ent. Belge, xli. p. 409 (1897).

♂. Head and thorax rufous; tarsi blackish ringed with white; abdomen fuscous black, the anal tuft and ventral surface rufous. Fore wing rufous; the antemedial line commencing as an oblique white striga from costa, then indistinct, dark, angled inwards in cell and excurved below cell and above inner margin; some white scales on subcostal and median nervures; orbicular represented by a minute angled white mark; reniform fuscous and white defined by white, slightly angled inwards on subcostal nervure and strongly on median nervure, a patch of grey scales above it on costa; the postmedial line indistinct, dentate and produced to points on the veins, bent outwards below costa and incurved below vein 4: some white points on costa towards apex; the subterminal line formed by a series of small blackish spots angled outwards at vein 7 and excurved at middle; cilia white at tips. Hind wing fuscous brown; the cilia rufous; the underside pale, the costal and terminal areas suffused with rufous and irrorated with brown, a dark discoidal lunule and sinuous postmedial line.

Hab. Ecuador, Loja, type † ♂ in Coll. Dognin. *Exp.* 24 millim.

1628. Eriopyga irrorata. (Plate LXXXVII. fig. 29.)

Orthodes irrorata, Smith, Pr. U.S. Nat. Mus. x. p. 478 (1887); id. Cat. Noct. N. Am. p. 200.

Head and thorax red-brown, the scales tipped with grey; metathoracic crest blackish; pectus ochreous; palpi and legs blackish and ochreous, the tarsi black with pale rings; abdomen grey-brown, more ochreous towards base, the anal tuft tinged with rufous. Fore wing pale rufous, the veins with some black irroration; subbasal line indistinct, pale, minutely waved, from costa to submedian fold, with a broad band of fuscous irroration beyond it; antemedial line waved, slightly oblique; orbicular

minute, ochreous defined with black and with black point at centre; reniform small, white defined by black, rather figure-of-8-shaped and with black points in its upper and lower portions; a rather oblique diffused medial shade; postmedial line slightly bent outwards below costa, then confluent with outer edge of reniform, below vein 4 incurved and confluent with medial shade, a series of black points beyond it from vein 6 to inner margin and some pale points on costa; subterminal line ochreous defined by fuscous on inner side and with some small dentate black marks at middle, slightly angled outwards at vein 7 and excurved at middle; a series of black points on termen and ochreous points at base of cilia. Hind wing ochreous suffused with fuscous, deeply on terminal half; the cilia ochreous; the underside ochreous thickly irrorated with black, a black discoidal bar, diffused postmedial band and terminal series of points.

Hab. Canada, Br. Columbia, 1 ♀; U.S.A., Washington, 1 ♂, California, 1 ♂, Sierra Nevada, Truckee, 1 ♀. *Exp.* 30 millim.

1629. **Eriopyga virgula.** (Plate LXXXVII. fig. 30.)

Tæniocampa virgula, Grote, Papilio, iii. p. 76 (1883); Smith, Cat. Noct. N. Am. p. 200.

♂. Head ochreous tinged with rufous; thorax fuscous brown; pectus, legs, and abdomen ochreous tinged with rufous. Fore wing dull reddish brown; an indistinct subbasal line from costa to submedian fold; an indistinct waved antemedial line, angled inwards on vein 1; claviform and orbicular absent; reniform very indistinct and narrow, with traces of a whitish annulus; an obscure medial shade, oblique from costa to median nervure; postmedial line indistinct, somewhat dentate, oblique from costa to vein 6, incurved below vein 4; subterminal line indistinct, pale, with a series of dentate black marks before it at middle, somewhat angled outwards at vein 7 and excurved at middle. Hind wing yellowish white suffused with fuscous except at base; the underside whitish irrorated wfth brown and tinged with yellow especially on costal and inner areas, a small discoidal lunule and diffused curved postmedial line.

Hab. U.S.A., Colorado, New Mexico, Beulah (*Cockerell*), 1 ♂, Arizona. *Exp.* 28 millim.

1630. **Eriopyga pyropis**, n. sp. (Plate LXXXVII. fig. 31.)

Head and thorax dark brown tinged with rufous; tarsi with whitish rings; abdomen fuscous brown, the anal tuft rufous. Fore wing purplish brown suffused with brick-red, leaving the veins dark; an indistinct waved subbasal line from costa to submedian fold; an oblique waved antemedial line; orbicular obsolete; reniform small, figure-of-8-shaped, whitish suffused with brick-red except lower extremity; postmedial line dentate, bent outwards below costa.

slightly incurved at discal fold, incurved below vein 4, some pale points beyond it on costa; subterminal line indistinct, pale, slightly angled outwards at vein 7 and excurved at middle. Hind wing fuscous brown; the underside whitish thickly irrorated with brown, a dark discoidal lunule and sinuous postmedial line.

Hab. Costa Rica, Candelaria Mts. (*Rogers*), 1 ♂, 1 ♀, type, Godman-Salvin Coll. *Exp.* 32 millim.

*1631. Eriopyga ignescens. (Plate XCIV. fig. 7.)

Himella ignescens, Schaus, J. N.Y. Ent. Soc. xi. p. 232 (1903).

♂. Head and thorax purplish red-brown, the scales slightly tipped with grey; abdomen fuscous, the anal tuft ochreous, the ventral surface purplish red. Fore wing dull brown strongly suffused with purple-red; an indistinct oblique waved antemedial line; orbicular absent; reniform small, ochreous strongly suffused with vermilion; postmedial line indistinct, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, some pale points beyond it on costa; subterminal line indistinct, ochreous slightly defined by fuscous on inner side, slightly angled outwards at vein 7 and excurved at middle; a fine pale line at base of cilia. Hind wing fuscous brown; cilia pale, with a brown line through them; the underside whitish irrorated with fuscous, the costal area tinged with purplish, a small black discoidal spot and indistinct curved postmedial line.

Hab. Mexico, Orizaba, type† ♂ in Coll. Schaus. *Exp.* 26 millim.

1632. Eriopyga iole. (Plate LXXXVII. fig. 32.)

Orthodes iole, Schaus, Trans. Am. Ent. Soc. xxi. p. 237 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 485.

Tæniocampa ovidueta, Druce, Biol. Centr.-Am., Het. i. p. 288 (nec Guen.).

Head and thorax pale rufous; abdomen fuscous brown, the anal tuft rufous. Fore wing pale rufous; the costal edge yellowish white; the veins irrorated with white scales; the subbasal line represented by some white scales; the antemedial line indistinct, oblique, waved; orbicular and reniform brown defined by white, the former irregularly rounded, the latter irrorated with white; traces of a waved medial line; postmedial line indistinct, minutely waved, slightly bent outwards below costa and incurved below vein 4; subterminal line formed by a series of white lunules defined on inner side by small dentate brown marks, angled outwards at vein 7 and excurved at middle; a fine whitish line at base of cilia. Hind wing whitish suffused with brown, especially on veins and marginal areas.

Hab. Mexico, Las Vegas (*Hoege*), 1 ♀; Guatemala, S. Geronimo (*Champion*), 1 ♂, Guatemala City (*Rodriguez*), 1 ♂, Godman-Salvin Coll. *Exp.* ♂ 30, ♀ 32 millim. Type† in Coll. Schaus.

1633. Eriopyga vecors. (Plate LXXXVIII. fig. 1.)

Orthodes vecors, Guen. Noct. i. p. 376 (1852); Smith, Cat. Noct. N. Am. p. 199.
Orthodes enervis, Guen. Noct. iii. p. 420 (1852).
Cerastis prodeuns, Wlk. x. 452 (1856).
Apamea togata, Wlk. xxxii. 672 (1865).
Celæna velata, Wlk. Can. Nat. & Geol. v. p. 256 (1860).
Orthodes griseocincta, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 120 (1873).
Orthodes nitens, Grote, Papilio, iii. p. 31 (1883).

Head and thorax yellow or red-brown sometimes tinged with purple; abdomen ochreous irrorated with fuscous brown, the anal tuft ochreous. Fore wing red-brown, more or less strongly suffused with purplish and irrorated with white, chiefly on the veins; an indistinct waved subbasal line from costa to submedian fold; antemedial line oblique, waved; claviform and orbicular absent; reniform a small pale reddish lunule defined by fuscous; postmedial line indistinct, minutely waved, bent outwards below costa, incurved at discal fold and more strongly below vein 4, with a series of points beyond it on the veins and some pale points on costa; subterminal line indistinct yellowish, defined by brown on inner side and by black points at middle, angled outwards at vein 7 and excurved at middle; some slight dark points on termen. Hind wing yellowish brown, the cilia pale with a brown line through them; the underside whitish irrorated with brown, a discoidal lunule, sinuous postmedial line, and some dark subterminal marks.

Ab. 1. *prodeuns*. Fore wing with the reniform white.

Ab. 2. Thorax and fore wing dark purplish brown.

Ab. 3. *griseocincta*. Purplish brown; fore wing with white irroration, the lines prominently defined by white.

Hab. Canada, Montreal (*Lyman*), 1 ♂, Nova Scotia (*Redman*), 1 ♂, type *prodeuns*; U.S.A., N.E. States, 1 ♂, 3 ♀, type & type *griseocincta*, Massachusetts, New York, Albany (*W. W. Hill*), 1 ♀, Columbia Distr., Wisconsin, Mississippi. *Exp.* 28–34 millim.

1634. Eriopyga puerilis. (Plate LXXXVIII. fig. 2.)

Mamestra puerilis, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 64 (1874); Smith, Cat. Noct. N. Am. p. 200.

Head and thorax ochreous, more or less strongly tinged with purplish red and sometimes with grey; abdomen grey dorsally tinged with fuscous, the anal tuft usually yellowish or reddish. Fore wing ochreous, more or less strongly suffused with purplish red; the veins with dark streaks and grey irroration; an indistinct waved subbasal line from costa to submedian fold; an oblique waved antemedial line; orbicular absent or represented by a small white spot with a black streak between it and reniform, which is small, indistinct, pale or with its upper part filled in with white or represented by a figure-of-8-shaped mark; a diffused medial line oblique from costa to lower angle of cell, where it is angled; postmedial line sinuous, bent outwards below costa, slightly

incurved at discal fold and incurved below vein 4, with a series of black points beyond it on the veins and some pale points on costa; subterminal line ochreous white defined by brown on inner side and often by some small black spots at middle, angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing fuscous brown, the cilia yellowish; the underside ochreous irrorated with brown, the costal area suffused with red, a black discoidal lunule and sinuous postmedial line.

Hab. U.S.A., Washington, 1 ♀, California, S. Francisco (*Stretch*), 2 ♂, Mendocino, 3 ♂ type, (*Walsingham*), 1 ♂. *Exp.* 30 millim.

*1635. Eriopyga rubor. (Plate XC. fig. 8.)

Orthodes rubor, Guen. Noct. i. p. 374 (1852).

♀. Head and thorax bright rufous slightly tinged with grey; abdomen ochreous tinged with rufous, the anal tuft ochreous. Fore wing bright rufous with a purplish tinge; subbasal line represented by a few dark scales: antemedial line very indistinct, slightly sinuous; claviform absent; orbicular and reniform well-developed, with dark outlines, the former elliptical; an oblique sinuous medial line from lower angle of cell to inner margin; postmedial line very indistinct and with a series of dark points beyond it on the veins, slightly bent outwards below costa, excurved to vein 4, then incurved; subterminal line pale defined by fuscous on inner side, slightly angled at vein 7, then oblique. Hind wing ochreous whitish, the veins and terminal area tinged with fuscous; cilia ochreous; the underside with the costal area tinged with rufous and irrorated with fuscous, a small discoidal lunule and traces of a sinuous postmedial line.

Hab. Brazil, New Fribourg, type † ♀ in Coll. Oberthür. *Exp.* 34 millim.

*1626. Eriopyga leucopera. (Plate LXXXVIII. fig. 3.)

Himella leucopera, Schaus, J. N.Y. Ent. Soc. xi. p. 234 (1903).

♀. Head and thorax purplish pink mixed with white; abdomen whitish dorsally tinged with fuscous, ventrally with pink irrorated with brown, the anal tuft yellowish. Fore wing pale pinkish largely suffused with ferruginous red; a slight subbasal line from costa to submedian fold, with a fuscous point beyond it in cell; antemedial line brown, slightly defined by whitish on inner side, at middle of cell bent outwards to below orbicular; orbicular and reniform large, rather browner with whitish annuli, the former round; an indistinct curved medial line; postmedial line brown, defined by whitish on outer side and with a series of black and white points on the veins beyond it, bent outwards below costa, excurved to vein 4, then incurved; subterminal line whitish defined by rufous on inner side, slightly waved and angled outwards at vein 7, the area beyond it rather brighter rufous except the apex which is grey; a fine waved grey terminal line. Hind wing

semihyaline white, the veins and costal area ochreous tinged with brown; the cilia ochreous; the underside with the costal area ochreous irrorated with brown and with a slight postmedial line on it.

Hab. Brazil, São Paulo, type † ♀ in Coll. Schaus. *Exp.* 30 millim.

*1637. Eriopyga marginalis. (Plate LXXXVIII. fig. 4.)

Himella marginalis, Schaus, J. N.Y. Ent. Soc. xi. p. 233 (1903).

♀. Head and thorax red-brown mixed with ochreous and black; tarsi banded with black; abdomen fuscous brown, the ventral surface ochreous irrorated with red and black. Fore wing reddish brown suffused with dark brown, the basal area with some ochreous; a double, waved subbasal line from costa to submedian fold; an ill-defined double antemedial line oblique from costa to submedian fold, then bent inwards to inner margin, angled inwards in cell; traces of a round orbicular with ochreous annulus; reniform indistinct, figure-of-8-shape, with pale annulus with ochreous points on it, incomplete below; an indistinct waved line from lower angle of cell to inner margin; postmedial line double, dentate and produced to black and ochreous points on the veins, bent outwards below costa and incurved below vein 4, some pale points beyond it on costa; a wedge-shaped black spot beyond it in discal fold indenting an oblique white subterminal band, which is tinged with olive towards costa and inner margin and at middle, its outer edge forming the subterminal line, which is incurved at middle and with the area beyond it red-brown; a terminal series of brown lunules with some white irroration between them. Hind wing dark brown, paler towards base; cilia rufous, whitish at tips; the underside whitish thickly irrorated with dark brown, the terminal area suffused with purplish pink, a black discoidal spot and sinuous postmedial line.

Hab. Brazil, São Paulo, type † ♀ in Coll. Schaus. *Exp.* 38 millim.

d^2. Fore wing of male on underside with the cell not clothed with long sparse downturned hair.
  a^1. Fore wing with the postmedial line excurved to vein 5, then incurved.
    a^4. Hind wing pale, the terminal area more or less suffused with brown.
      a^5. Fore wing tinged with ochreous ..... *contrahens.*
      b^5. Fore wing tinged with purplish red ..... *conar.*
    b^4. Hind wing nearly uniformly suffused with brown.
      a^5. Fore wing red-brown..... *perbrunnea.*
      b^5. Fore wing grey-brown ..... *hyposcota.*
  b^1. Fore wing with the postmedial line excurved to vein 4, then incurved.
    a^4. Hind wing pale at base, the terminal half usually more or less suffused with brown, especially in female.

a^6. Fore wing with the postmedial line minutely dentate, with dark points beyond it on the veins.
a^7. Fore wing grey-brown tinged with purplish red ..... *uniformis.*
b^7. Fore wing ochreous grey-brown more or less tinged with rufous.
a^8. Hind wing with the terminal half largely suffused with brown.
a^9. Fore wing without medial shade ... *effurata.*
b^9. Fore wing with medial shade ..... *furfurata.*
b^8. Hind wing white, the veins and terminal area slightly tinged with brown..... *oroba.*
c^6. Fore wing pale rufous; hind wing with the terminal area not tinged with brown. *thermistis.*
b^5. Fore wing with the postmedial line dentate, without points beyond it on the veins..... *poliotis.*
c^5. Fore wing with the postmedial line not dentate ..... *unicolora.*
b^4. Hind wing uniform brown.
a^5. Fore wing with the reniform filled in with rufous ..... *viuda.*
b^5. Fore wing with the reniform filled in with pure white.
a^6. Fore wing with the lines obsolete ..... *tertulia.*
b^6. Fore wing with the lines present; some small dentate black marks before subterminal line ..... *adonea.*

1638. Eriopyga contrahens.

Celæna contrahens, Wlk. Can. Nat. & Geol. v. p. 255 (1860); Smith, Cat. Noct. N. Am. p. 200.
Mamestra thecata, Morr. Proc. Ac. Nat. Sci. Phil. 1875, p. 59.
Graphiphora contrahens, Grote, Bull. U.S. Geol. Geog. Surv. Terr. iv. p. 180 (1878).

Head and thorax greyish ochreous mixed with dark brown; abdomen greyish ochreous irrorated with brown. Fore wing ochreous, largely suffussd and irrorated with fuscous brown, leaving the inner area and an oblique fascia from apex pale; the veins irrorated with grey; subbasal line dark, defined by ochreous on outer side, waved, from costa to submedian fold; antemedial line double, filled in with ochreous, oblique, waved; orbicular and reniform small and rather indistinct, with dark centres and pale annuli, the former round; postmedial line defined by ochreous on outer side, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; an oblique pale fascia from apex to vein 5; no trace of subterminal line; a terminal series of small black lunules; cilia with ochreous line at base and intersected with ochreous.

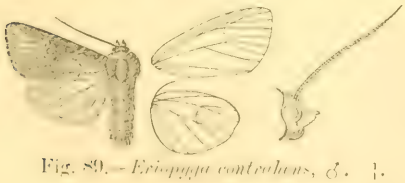


Fig. 89.—*Eriopyga contrahens*, ♂. ½.

Hind wing yellowish brown, the terminal area suffused with brown; the underside with the costal and terminal areas irrorated with brown, a dark discoidal lunule, sinuous postmedial line, and terminal series of black striæ.

Ab. 1. Fore wing tinged with purplish.

Hab. Canada, Renfrew Co., 2 ♂, 2 ♀, Nova Scotia; U.S.A., 1 ♂, type *contrahens*, Grote, Maine, New Hampshire, New York, Nebraska, Colorado, California, Mt. Diablo, 1 ♀, New Mexico. *Exp.* 30–34 millim.

1639. Eriopyga conar. (Plate LXXXVIII. fig. 5.)

Agrotis conar, Streck. Lep. Rhop. & Het., Suppl. i. p. 7 (1898); Dyar, Cat. Lep. N. Am. p. 165.
Himella quadristigma, Smith, Proc. U.S. Nat. Mus. xxii. p. 480 (1900).

♂. Head and thorax pale reddish mixed with fuscous and some grey; palpi and frons at sides fuscous; tarsi fuscous with pale rings; abdomen pale. Fore wing pale suffused with purplish red-brown and with some dark irroration; subbasal line represented by double striæ from costa and cell, where there are some black scales on each side of it; antemedial line double at costa, then rather ill-defined, irregularly waved and angled inwards on vein 1; claviform absent; orbicular and reniform with black centres and whitish annuli slightly defined by black, the former small, round, the latter narrow above; a faint oblique medial line from lower angle of cell to inner margin; postmedial line black, defined by whitish on outer side and produced to short black streaks on the veins, slightly bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line only defined by the area beyond it being darker, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black lunules; cilia blackish with a fine pale line at base. Hind wing yellowish white, the veins and termen slightly tinged with brown, a fine dark terminal line; the underside with the costal and terminal areas irrorated with fuscous, a small discoidal spot and waved postmedial line.

Hab. U.S.A., Nebraska, 1 ♂, Utah; New Mexico, Santa Fé (*Cockerell*), 1 ♂, Arizona. *Exp.* 32 millim.

1640. Eriopyga perbrunnea. (Plate LXXXVIII. fig. 6.)

Graphiphora perbrunnea, Grote, Can. Ent. xi. p. 28 (1879); Smith, Cat. Noct. N. Am. p. 202.

Head and thorax clothed with purplish red, dark brown, and grey scales and hair; tarsi with pale rings; abdomen grey mixed with dark brown, the anal tuft and ventral surface tinged with purplish red. Fore wing purplish red irrorated with fuscous, the costal area, cell, and terminal area suffused with fuscous; the veins irrorated with white scales; the subbasal line represented by a black striga from costa and small spot below cell; the antemedial line indistinct, oblique, waved; orbicular very indistinctly defined, round; reniform narrow, black defined by white, very incompletely except on outer

side; postmedial line rather indistinct, defined by whitish on outer side, oblique from costa to vein 6 and incurved below vein 4, with black streaks interrupted by white points on the veins beyond it; subterminal line indistinct, defined by fuscous on inner side and by diffused fuscous streaks on the veins beyond it, angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing pale, almost uniformly suffused with fuscous; cilia yellowish; the underside whitish irrorated with fuscous, a black discoidal lunule, sinuous postmedial line, and terminal series of black striæ.

Hab. Canada, Vancouver I. (*J. J. Walker*), 1 ♂; U.S.A., California, 2 ♂, 1 ♀, type. *Exp.* 32 millim.

1641. **Eriopyga hyposcota**, n. sp. (Plate XC. fig. 9.)

♂. Head and thorax grey-brown with a slight rufous tinge; abdomen fuscous brown. Fore wing grey-brown slightly tinged rufous, especially on terminal area; traces of a waved subbasal line from costa to submedian fold; antemedial line pale grey, obliquely excurved; claviform absent; orbicular and reniform small with grey annuli, the former round, the latter constricted at middle; postmedial line pale grey, bent outwards below costa, excurved to vein 5, then incurved, some more or less prominent slight grey and black streaks beyond it on the veins; subterminal line grey, defined by fuscous on inner side, very slightly angled outwards at vein 7 and excurved at middle, bent outwards to tornus; a terminal series of small brown spots. Hind wing pale almost uniformly suffused with brown, the cilia whitish. Underside of both wings suffused with fuscous, on fore wing to subterminal, on hind wing to postmedial line.

Hab. Brazil, Bahia, Cachimbo, 1 ♂ type. *Exp.* 30 millim.

1642. **Eriopyga uniformis.** (Plate LXXXVIII. fig. 7.)

Tæniocampa uniformis, Smith, Proc. U.S. Nat. Mus. x. p. 472 (1887); id. Cat. Noct. N. Am. p. 202.

♀. Head and thorax grey mixed with fuscous and tinged with purplish red; tarsi blackish with pale rings; abdomen fuscous mixed with grey. Fore wing grey suffused with purplish red and irrorated with fuscous, the veins with some white points on them; subbasal line represented by two faint dark striæ from costa; antemedial line very indistinct, double, waved, oblique; claviform absent; orbicular and reniform small, very indistinctly defined, the former round, the latter with some fuscous in lower part and white points round it; postmedial line indistinct, dentate, bent outwards below costa, excurved to vein 4, then incurved, some grey points beyond it on costa; subterminal line indistinct, grey, slightly defined by fuscous on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of slight points. Hind wing whitish more or less entirely suffused with fuscous, the terminal area darker; cilia white with a dark line through them; the

underside white, the costal area irrorated with black, a discoidal point, sinuous postmedial line, and some points on termen.

Hab. U.S.A., Arizona, Prescott (*Kunze*), 2 ♀. *Exp.* 28 millim.

1643. **Eriopyga affurata**, nom. nov. (Plate LXXXVIII. fig. 8.)

Himella furfurata, Smith, Cat. Noct. N. Am. p. 201 (nec Grote).

Head and thorax pale reddish brown mixed with grey; palpi blackish at sides; pectus with the hair dark brown in front; abdomen grey-brown, the anal tuft more ochreous. Fore wing greyish, suffused in part with pale rufous and irrorated with fuscous; subbasal line waved, blackish from costa to submedian fold; antemedial line oblique, waved, angled inwards on vein 1; orbicular and reniform small, with brown centres and pale annuli incompletely defined by fuscous, the former round, the latter with its lower part filled in with black, sometimes with two white points on its outer edge; medial line oblique from costa to lower angle of cell, then waved; postmedial line oblique from costa to vein 6, then dentate and produced to points on the veins, incurved at submedian interspace, some pale points beyond it on costa; subterminal line pale, defined by brown on inner side, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing whitish, slightly tinged with brown in male, wholly suffused with brown in female; the underside whitish, the costal and terminal areas irrorated with brown, a discoidal spot, curved postmedial line, and terminal series of points.

Ab. 1. Fore wing much more evenly suffused with pale red-brown; hind wing fuscous brown in both sexes.

Hab. Canada, Br. Columbia, Vancouver I. (*J. J. Walker*), 1 ♀; U.S.A., Illinois, Colorado, California, Sanszalito, 4 ♂, 1 ♀, type, Arizona. *Exp.* 30 millim.

1644. **Eriopyga furfurata.** (Plate LXXXVIII. fig. 9.)

Himella furfurata, Grote, Proc. Ac. Nat. Sci. Phil. xxvi. p. 201 (1874).
Tæniocampa peredia, Grote, Papilio, iii. p. 32 (1883); Smith, Cat. Noct. N. Am. p. 201.

Head and thorax whitish tinged with pale purplish red and with some fuscous scales; prothoracic crest tipped with fuscous; abdomen ochreous irrorated with brown. Fore wing ochreous whitish, suffused with pale purplish red and with some dark irroration; subbasal line hardly traceable; antemedial line indistinct, oblique from costa to submedian fold, then angled inwards on vein 1; orbicular and reniform large, pale, very indistinctly defined by fuscous scales, the former round, the latter with its lower part filled in with fuscous and with some white points on its outer edge; a medial shade, angled at lower angle of cell; postmedial line indistinct, with a series of dark points beyond it on the veins, bent outwards below costa and incurved below vein 4, some pale points beyond it on costa; subterminal line very indistinct, pale with

slight dark shade on inner side, slightly angled outwards at vein 7 and excurved at middle; a prominent terminal series of small black spots. Hind wing pale ochreous suffused with brown; cilia whitish; the underside whitish irrorated with brown, a slight discoidal lunule, curved postmedial line, and terminal series of dark striæ.

Hab. U.S.A., Maine, 1 ♀, New York, Albany (*Meske*), 1 ♂, 1 ♀ type, Vermont. *Exp.* 24 millim.

1645. Eriopyga oroba.

Agrotis oroba, Druce, Biol. Centr.-Am., Het. i. p. 285, pl. 27. f. 10 (1889).
Caradrina blanduja, Dgn. Ann. Soc. Ent. Belge, xli. p. 246 (1897).

♂. Head and thorax grey to red-brown mixed with grey; palpi black at sides, whitish at tips; tarsi black-brown; abdomen fuscous, the anal tuft and ventral surface ochreous. Fore wing grey to red-brown slightly irrorated with black; subbasal black points on costa and median nervure; antemedial points on costa, median nervure, and vein 1, or an oblique waved line; claviform sometimes represented by a small rufous spot; reniform small, dark red-brown slightly defined by ochreous or whitish; postmedial line indistinct, black, dentate and produced to points on the veins, arising from a small spot on costa, bent outwards below costa, excurved to vein 4, then incurved; subterminal line indistinct, ochreous or whitish, angled outwards at vein 7 and excurved at middle, defined by fuscous suffusion on inner side and the area beyond it suffused with fuscous; a terminal series of black points; cilia reddish with white and black lines through them. Hind wing white; the cilia ochreous; the underside of costal area irrorated with brown, a small black discoidal spot and subterminal series of points towards costa.

♀. Abdomen with the anal tuft fuscous; hind wing with the veins, termen, and cilia rather more tinged with fuscous.

The form *blanduja* from Ecuador is rather redder than the typical Mexican form.

Hab. Mexico, Guerrero (*H. H. Smith*), 2 ♂, 1 ♀, type Godman-Salvin Coll.; Ecuador, Loja, 1 ♂, 2 ♀. *Exp.* 36 millim. Type † ♂, ♀ *blanduja* in Coll. Dognin.

*1646. Eriopyga thermistis. (Plate XCIV. fig. 8.)

Eriopyga thermistis, Druce, ined.

♂. Head and thorax pale rufous; palpi black except at tips; abdomen ochreous, the extremity and ventral surface tinged with rufous. Fore wing pale rufous, the terminal area suffused with dark rufous; antemedial line indistinct, waved, with black points on costa and veins; orbicular and reniform small, very indistinctly defined, the former round, the latter filled in with rather darker brown; postmedial line represented by a series of black points on the veins with traces of a dentate line between them, slightly bent outwards below costa,

excurved to vein 4, then oblique; traces of a pale subterminal line slightly angled outwards at vein 7. Hind wing yellowish white; the cilia ochreous; the underside with the costal area tinged with rufous and irrorated with brown, a postmedial dark line on costal area.

Hab. Colombia, Sierra del Libane, 6000′ (*H. H. Smith*), type † in Coll. Druce. *Exp.* 32 millim.

1647. **Eriopyga poliotis**, n. sp. (Plate LXXXVIII. fig. 10.)

Head and thorax brown mixed with grey, the scales tipped with grey; abdomen grey-brown. Fore wing grey-brown, irrorated with whitish and dark brown scales, especially on basal half; an indistinct oblique waved antemedial line; claviform absent; orbicular and reniform rather large, very indistinct and hardly defined except by some white points round them; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line represented by a series of small dentate fuscous and white marks, bent outwards at vein 7 and excurved at middle; a terminal series of small dark lunules; a fine white line at base of cilia. Hind wing white tinged with brown; the veins and terminal half suffused with brown; cilia whitish, with a brown line through them; the underside with the costal and terminal areas thickly irrorated with brown, a small discoidal spot and sinuous postmedial line with dark streaks on it at the veins.

Hab. Ecuador, Riobamba, 1 ♂, 1 ♀, type. *Exp.*, ♂ 42, ♀ 46 millim.

*1648. **Eriopyga unicolora.** (Plate LXXXVIII. fig. 11.)

Agrotis unicolora, Mssn. Stübel's Reise, p. 144, pl. vi. f. 27 (1890).

♂. Head and thorax reddish brown, some of the hairs tipped with grey. Fore wing reddish brown with a slight purplish-grey gloss; subbasal and antemedial lines and claviform obsolete; orbicular and reniform barely traceable, with faint dark outlines; postmedial line very indistinct, bent outwards below costa; excurved to vein 4, then incurved; traces of a dark subterminal line angled outwards at vein 7 and excurved at middle. Hind wing white, the veins, costal and terminal areas suffused with brown; the underside with discoidal point.

Hab. Ecuador, Collanes, Calcitpungo, type † ♂ in Mus. Berlin. *Exp.* 34–38 millim.

*1649. **Eriopyga viuda.** (Plate LXXXVIII. fig. 12.)

Celerena viuda, Dogn. Ann. Soc. Ent. Belge, xli. p. 410 (1897).

♀. Head and thorax very dark red-brown, the hairs tipped with ochreous; tarsi with ochreous rings; abdomen very dark red-brown. Fore wing dark red-brown irrorated with blackish, the antemedial area, a medial shade, and the terminal area suffused with

blackish; a slight waved subbasal line from costa to submedian fold, defined by pale rufous on inner side; an oblique, waved antemedial line, defined by rufous on inner side; orbicular and reniform rather small, indistinct, ferruginous red, the former round; postmedial line double, minutely waved, filled in with rufous, oblique from costa to vein 7, excurved to vein 4, then incurved; subterminal line indistinct, formed by a series of small ochreous and black lunules, angled outwards at vein 7 and excurved at middle. Hind wing dark brown; the cilia greyish; the underside irrorated with white, a dark discoidal spot and curved postmedial line.

Hab. Ecuador, Loja, type † ♀ in Coll. Dognin. *Exp.* 32 millim.

*1650. Eriopyga tertulia. (Plate LXXXVIII. fig. 13.)

Perigea tertulia, Dogn. Ann. Soc. Ent. Belge, xli. p. 27 (1897).

♀. Head and thorax very dark reddish brown; abdomen fuscous brown, the anal tuft ochreous. Fore wing black-brown suffused with deep red-brown; reniform small, pure white; five ochreous points on costa towards apex. Hind wing dark brown; the underside grey thickly irrorated with brown, especially on costal area, a dark discoidal spot and traces of sinuous postmedial and subterminal lines.

Hab. Ecuador, Loja, type † ♀ in Coll. Dognin. *Exp.* 30 millim.

1651. Eriopyga adonea.

Perigea adonea, Druce, Biol. Cent.-Am., Het. ii. p. 481, pl. 94. f. 4 (1898).

Head and thorax brown with a purplish tinge; abdomen fuscous, the anal tuft more ochreous, the ventral surface grey irrorated with fuscous. Fore wing brown suffused with purplish and slightly irrorated with white; traces of a waved subbasal line from costa to submedian fold; antemedial line oblique, waved, slightly defined by grey on inner side; orbicular and reniform very small, round, defined by black, the former with a few white scales representing the annulus, the latter with white or ochreous centre; an indistinct medial line; postmedial line dentate, bent outwards below costa, then oblique, some pale points beyond it on costa; subterminal line represented by a series of very small black spots with some white scales on their outer side. Hind wing fuscous brown; the cilia pale with a brown line through them; the underside pale thickly irrorated with brown, a slight discoidal lunule and sinuous postmedial line.

Hab. Costa Rica, Irazu (*Rogers*), 1 ♂, 3 ♀, type, Godman-Salvin Coll. *Exp.* 24–28 millim.

Genus ERIOPYGODES, nov.

Type, *E. imbecilla.*

Proboscis fully developed; palpi oblique, the 2nd joint fringed with long hair, the 3rd porrect; frons smooth; eyes large, rounded; head and thorax

clothed with hair only, the pro- and metathorax with spreading crests; tibiæ fringed with hair; abdomen with rough hair at base and lateral fringes, but without crests. Fore wing rather narrow, the apex not produced, the termen curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

Sect. I. Antennæ of male serrate.

1652. Eriopygodes imbecilla.

Noctua imbecilla, Fabr. Ent. Syst. iii. 2, p. 113 (1794); Hübn. Eur. Schmett., Noct. f. 555; Dup. Lép. Fr. Suppl. iii. p. 363, pl. 33. f. 3, *a*, *b*; Staud. Cat. Lep. pal. p. 194.
Mythimna disparilis, Ochs. Schmett. Eur. iv. p. 78 (1816).
Mythimna nexa, Dup. Lép. Fr. vii. p. 62, pl. 104. f. 4 (1821).
Noctua aliena, Hübn. Eur. Schmett., Noct. f. 441 (1827).
Noctua alpina, Hübn. Eur. Schmett., Noct. ff. 728, 729 (1827).

♂. Head and thorax bright rufous; abdomen fuscous brown, the anal tuft and ventral surface rufous. Fore wing ochreous tinged with rufous, the veins rufous; antemedial line rufous, sinuous, incurved in cell; claviform and orbicular absent; reniform with indistinct whitish annulus; an indistinct medial shade oblique from costa to median nervure; postmedial line single, even, bent outwards below costa, excurved to vein 4, then incurved; subterminal line dark, angled outwards at vein 7, then oblique, straight,

Fig. 90.—*Eriopygodes imbecilla*, ♂. ½.

a dark patch before it on costa with pale rufous points on it; a dark terminal line. Hind wing fuscous brown; the cilia ochreous; the underside whitish tinged and irrorated with rufous, a slight discoidal spot and sinuous postmedial line.

♀. Fore wing deep rufous, the pale reniform prominent.

Hab. France, Sand Coll.; Germany; Switzerland (*Staudinger*), Zeller and Frey Colls.; Austria; Hungary, Leech Coll.; Bulgaria, Rilo Dagh (*Elwes*); Scandinavia; Russia, Esthonia, Frey Coll., Livonia, Zeller Coll., Urals; Armenia; W. Turkestan, Tarbagatai, Ala Tau; Siberia; Mongolia, Urga; E. Siberia, Amur, 1 ♂. *Exp.* 28–30 millim.

Sect. II. Antennæ of male minutely ciliated.

A. Fore wing with the antemedial line waved ..... *impar*.
B. Fore wing with the antemedial line oblique..... *euclidias*.

1653. Eriopygodes impar.

Mythimna impar, Staud. Berl. ent. Zeit. 1870, p. 117; Mill. Icones, iii. pl. 149. ff. 6, 7; Staud. Cat. Lep. pal. p. 194.

♂. Head, thorax, and abdomen grey mixed with dark brown; tarsi with pale rings. Fore wing brownish grey with some dark irroration, especially in cell and on terminal area; subbasal line represented by slight dark striæ from costa and cell; a slight black streak in base of submedian fold; antemedial line double at costa, then indistinct, angled inwards in cell, then waved; claviform absent; orbicular and reniform more or less indistinct, small, with whitish annuli, the former round; postmedial line defined by grey on outer side, bent outwards below costa, then oblique, minutely

Fig. 91.—*Eriopygodes impar*, ♂. ½.

waved, some whitish points beyond it on costa; subterminal line pale grey, slightly angled outwards at vein 7 and inwards at discal and submedian folds, the area beyond it darker except at apex; a terminal series of dark striæ. Hind wing whitish tinged with brown; the underside irrorated with brown, a discoidal point and indistinct curved postmedial line.

Hab. S.E. Russia, Sarepta, 2 ♂, Caucasus, 1 ♂, D'Emmick Coll.; W. Turkestan, Saisan. *Exp.* 30 millim.

1654. Eriopygodes euclidias. (Plate LXXXVIII. fig. 14.)

Leucania euclidias, Meyr. Fauna Hawaii. i. p. 140 (1899).

Head and thorax pale to bright rufous; abdomen fuscous, the anal tuft, lateral fringes, and ventral surface rufous. Fore wing pale to bright rufous, often more or less suffused with dark brown or fuscous; subbasal line indistinct, pale, curved, from costa to submedian fold; antemedial line more or less distinct, oblique, double, often filled in with whitish; orbicular a white point with dark annulus; reniform represented by an oblique white bar the inner side of its annulus, sometimes with some white points representing its outer side, narrow and somewhat angled inwards on median nervure; postmedial line indistinct, double, filled in with pale colour or whitish, bent outwards below costa, then oblique and minutely waved, some white points beyond it on costa; subterminal line indistinct pale or more or less prominent white, defined by fuscous on inner side, sometimes extending to postmedial line and forming a distinct band, very slightly incurved at discal and submedian folds. Hind wing pale or whitish, slightly or deeply

suffused with fuscous especially in female, sometimes leaving the costal and terminal areas whitish; the underside pale, the costal area suffused with rufous and irrorated with white.

Ab. 1. Fore wing with the orbicular and reniform conjoined by a white streak in lower part of cell.

Ab. 2. Fore wing without white centre to orbicular.

Ab. 3. Fore wing with the white on reniform replaced by yellowish, the orbicular sometimes with yellow centre.

Ab. 4. Vertex of thorax, basal area of fore wing, cell and area on each side of subterminal line suffused with fiery red.

Hab. Hawaii, Kauai, Mt. Waimea, 4000′ (*Perkins*), 6 ♂, 1 ♀ type, Olaa, 6 ♂, 2 ♀, Kilauea, 1 ♀, Haleakala, 5 ♂, 7 ♀, Kona (*Perkins*), 1 ♂. *Exp.* 30–40 millim.

Genus **NEPHELODES.**

	Type.
Nephelodes, Guen. Noct. i. p. 129 (1852)	*emmedonia.*
Monosca, Wlk. Char. Undescr. Het. p. 29 (1869)	*emmedonia.*
Monostola, Alph. Rom. Mém. vi. p. 37 (1892)	*asiatica.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint fringed with hair, the 3rd moderate; frons smooth; eyes large, rounded; antennæ of male bipectinate, typically with short branches ending in a bristle, the apical part serrate; head and thorax clothed with hair only, the pro- and metathorax with spreading crests; tibiæ fringed with hair; abdomen with dorsal series of crests. Fore wing broad, the apex rectangular, the termen rounded; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

Sect. I. (*Monostola*). Antennæ of male bipectinate to apex, the branches long.

A. Fore wing with the postmedial line excurved above inner margin ..... *asiatica.*

B. Fore wing with the postmedial line not excurved above inner margin ..... *infans.*

1655. Nephelodes asiatica.

Monostola asiatica, Alph. Rom. Mém. vi. p. 37, pl. 2. f. 7, *a*, *b* (1892); Staud. Cat. Lep. pal. p. 194.

Fig. 92.—*Nephelodes asiatica*, ♂. ½.

♂. Head, thorax, and abdomen bright rufous; antennæ yellow. Fore wing bright rufous with very slight dark irroration; the veins and medial area slightly darker, especially towards inner margin; traces of a subbasal line from costa to submedian fold; antemedial

line obliquely curved from costa to submedian fold; claviform well developed, indistinctly defined by dark brown; orbicular and reniform indistinctly defined by brown, the former rounded; postmedial line bent outwards below costa, excurved to vein 6, slightly angled inwards at discal fold, oblique to submedian fold, then excurved; subterminal line only defined by the area beyond it being slightly darker. Hind wing yellowish, the terminal half suffused with fuscous; cilia rufous except towards tornus; the underside with the costal and terminal areas suffused with rufous, a discoidal spot and indistinct sinuous postmedial line.

Hab. Tibet, Kuku-noor, 1 ♂, Amdo; W. China. *Exp.* 42 millim.

*1656. Nephelodes infans.

Monostola infans, Alph. Rom. Mém. vi. p. 39 (1892); Staud. Cat. Lep. pal. p. 194.
Mythimna pectinata, Alph. Hor. Soc. Ent. Ross. xxvi. p. 450 (1892); id. Rom. Mém ix. p. 32, pl. 2. f. 4.

♂. Head and thorax bright rufous; antennæ ochreous; abdomen pale red-brown, the anal tuft rufous. Fore wing bright rufous; antemedial line indistinct, oblique from costa to submedian fold, then erect; orbicular and reniform defined by brown, the former round, the latter somewhat constricted at middle; postmedial line minutely dentate, bent outwards below costa, slightly incurved at discal fold, oblique below vein 4; the subterminal line only defined by slight dark irroration beyond it and before it at costa, angled outwards at vein 7 and slightly excurved at middle. Hind wing dark reddish brown, the cilia rufous; the underside pale suffused with reddish brown; a discoidal lunule and indistinct curved postmedial line.

Hab. Tibet, Kuku-noor, in Coll. Püngeler, Amdo; W. China. *Exp.* 36 millim.

Sect. II. Antennæ of male bipectinate with moderate branches, with short bristle at extremity.
A. Hind wing white, the terminal area tinged with brown ... *tertialis.*
B. Hind wing wholly suffused with brown ..... *pectinata.*

1657. Nephelodes tertialis. (Plate LXXXVIII. fig. 15.)

Nephelodes tertialis, Smith, J. N.Y. Ent. Soc. xi. p. 19 (1903).

♂. Head and thorax dark purplish red-brown; antennæ rufous; abdomen ochreous white suffused with rufous. Fore wing purple-brown with slight greyish irroration; the veins darker; the medial area deep red-brown from subcostal nervure to vein 1; subbasal line represented by a slight dark striga from costa; antemedial line indistinct, oblique, waved; traces of a small pale claviform; orbicular and reniform well-developed, purplish, indistinct, the former rounded, the latter somewhat angled inwards on median nervure and defined by a pale line on outer side; postmedial line indistinctly double, bent outwards below costa, excurved to vein 4,

then incurved, some pale points on costa beyond it; subterminal line indistinct, pale, angled outwards at vein 7 and excurved at middle; traces of a terminal series of dark points. Hind wing yellowish white, the veins and terminal area tinged with rufous; the underside with the costal and terminal area tinged with rufous.

Hab. CANADA, Manitoba, Winnipeg, 1 ♂ cotype; U.S.A., Colorado (*Cockerell*), 1 ♂. *Exp.* 40 millim.

1658. Nephelodes pectinata.

Nephelodes pectinatus, Smith, Can. Ent. xxxii. p. 221 (1900); Dyar, Cat. Lep. N. Am. p. 161.

♂. Head and thorax chocolate-brown with a purplish tinge; fore tarsi fuscous with pale rings; abdomen pale rufous. Fore wing pale purplish rufous slightly irrorated with fuscous, the veins streaked with fuscous; the medial area deep chocolate from subcostal nervure to vein 1; traces of a waved subbasal line from costa to submedian fold; an oblique waved antemedial line: orbicular and reniform moderate, pale, the former somewhat elliptical; postmedial line bent outwards below costa, excurved to vein 4, then

Fig. 93.—*Nephelodes pectinata*, ♂. ½.

strongly incurved, some pale points on costa beyond it; subterminal line formed of obscure sagittate rufous marks, somewhat angled outwards at vein 7 and excurved at middle; a fine dark terminal line. Hind wing fuscous brown with a reddish or purplish tinge; the cilia ochreous white; the underside pale ochreous thickly irrorated with rufous and the terminal area suffused with fuscous; a dark discoidal spot.

♀. Head, thorax, and fore wing more tinged with purple, the last with the medial area concolorous.

Hab. CANADA, Vancouver I. (*J. J. Walker, Mathew, Crompton*), 4 ♂, 1 ♀. *Exp.* 42–50 millim.

SECT. III. (*Nephelodes*). Antennæ of male bipectinate, with short branches with long bristle at extremity.

1659. Nephelodes emmedonia.

Noctua emmedonia, Cram. Pap. Exot. iii. p. 92, pl. 247, D (1779).
Nephelodes minians, Guen. Noct. i. p. 130 (1852); Smith, Cat. Noct. N. Am. p. 172.
Nephelodes violans, Guen. Noct. i. p. 130 (1852).
Graphiphora expansa, Wlk. x. 399 (1856).

Graphiphora subdolens, Wlk. x. 405 (1856).
Monosca submotata, Wlk. Char. Undescr. Het. p. 29 (1869).

Head and thorax bright rufous with a purplish tinge; tarsi banded with fuscous; abdomen ochreous tinged with rufous. Fore wing pale rufous suffused with rosy purplish, the area between the medial and postmedial lines deep rufous except costal and inner areas: subbasal line represented by a pale striga on costa: antemedial line oblique, waved, excurved in submedian interspace; medial line rather diffused, oblique, excurved in cell: orbicular and reniform of the ground-colour, well developed, the former rounded, very indistinctly defined; postmedial line minutely waved, bent outwards below costa, excurved to vein 4, then incurved, some pale

Fig. 94.—*Nephelodes emmedonia*, ♂ ½.

points beyond it on costa; subterminal line more or less strongly defined by fuscous on inner side, minutely dentate, angled outwards at vein 7 and excurved at middle; a terminal series of minute points sometimes present. Hind wing yellowish suffused with brown, rather more strongly towards termen; the cilia pinkish; the underside yellowish more or less strongly tinged with pink, a dark discoidal lunule and curved postmedial line.

Ab. 1. *violans*. Head, thorax, and fore wing more purple and without the red tones.

Hab. Canada (*Norman*), 1 ♂, 1 ♀, Nova Scotia (*Redman*), 2 ♂, 1 ♀; W. Canada, Orilla (*Bush*), 3 ♂ type, *expansa*; U.S.A., E. States, 5 ♂, 3 ♀, type *violans*, New York, 1 ♀, Illinois, 1 ♀, Virginia; hab. ign. 1 ♂ type *subdolens*, 1 ♀ type *submotata*. *Exp.* 40–58 millim.

Larva. Head dark brown, unmarked. Body uniformly cylindrical, grey-brown; dorsal and subdorsal lines broad, straight, pale yellow; sides paler, with a faint diffuse pale lateral line. Substigmatal band broad, even, pale yellow, the subventral region and venter pale. Feet black at base. Feeds on grass, etc.—H. G. D.

Genus **POLIODES**, nov.

Type, *P. flavidentula*.

Proboscis fully developed; palpi obliquely upturned, the 1st and 2nd joints fringed with long hair in front, the 3rd moderate, porrect; frons smooth; eyes large, rounded, overhung by long cilia; head and thorax clothed with scales and hair; antennæ of male ciliated; vertex of head tufted; tegulæ dorsally produced into a sharp ridge; pro- and metathorax with spreading crests; tibiæ fringed with hair; abdomen with dorsal series of crests and

fringed with hair at sides. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole: 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

A. Fore wing with subterminal series of small whitish lunules.
  a. Fore wing with the orbicular and reniform distinctly defined ..... *flavidentula*.
  b. Fore wing with the orbicular and reniform indistinct ... *violascens*.
B. Fore wing without subterminal series of yellowish-white lunules ..... *viola*.

*1660. Poliodes flavidentula.

Mamestra flavidentula, Schaus, J. N.Y. Ent. Soc. xi. p. 230 (1903).

♂. Head and thorax grey mixed with reddish brown; palpi blackish at sides; frons with black bar above; tegulæ with black medial line; patagia with some black scales near upper edge; tarsi banded with black; abdomen grey mixed with reddish brown and dorsally suffused with fuscous. Fore wing grey slightly irrorated with reddish brown; subbasal line represented by double black striæ from costa and cell; a black streak in base of submedian fold and

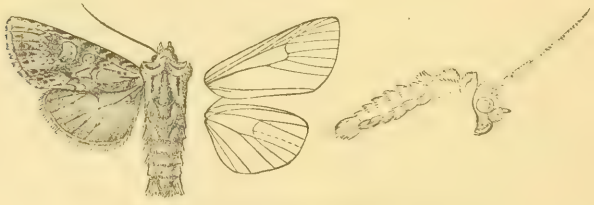


Fig. 95.—*Poliodes flavidentula*, ♂. ½.

another on inner margin before the antemedial line, which is double, waved, angled outwards below costa and inwards on vein 1 and to inner margin; claviform large, triangular, finely defined by black; orbicular and reniform large, grey with fine black outlines and reddish centres, the former rounded; a medial reddish-brown line, oblique from costa to vein 2, then dentate; postmedial line dentate, bent outwards below costa, excurved to vein 4, then oblique, and with a V-shaped black mark on its inner side beyond the extremity of claviform, some white points beyond it on costa; subterminal line represented by a series of small yellowish-white lunules defined by dentate black marks on inner side and with black streaks from them to the terminal lunules; cilia grey, with brown lines at base and tips, interrupted at the veins. Hind wing whitish suffused with brown, except in interspaces of basal two-thirds; cilia white, with brown line near base; the underside white, the marginal areas suffused with brown, a black discoidal spot and postmedial sinuous line with dark striæ at the veins.

Hab. Chili, type † ♂ in Coll. Schaus. *Exp.* 44 millim.

*1661. Poliodes violascens.

Xylina violascens, Mssn. Stübel's Reise, p. 146, pl. vii. f. 1 (1890).

Head and thorax purplish grey; abdomen whitish, suffused with brown towards extremity. Fore wing purplish grey irrorated with fuscous; subbasal line represented by a black point on costa and a patch below cell with short white streak on it; antemedial line represented by two points on costa and a mark on inner margin with short white streak on it; orbicular defined by brown at sides and below; reniform hardly traceable; postmedial line slightly waved, bent outwards below costa, incurved to vein 4, where it is angled outwards, then strongly incurved and with dark patch with short white streak on it below the cell on its inner side; subterminal line represented by a series of black spots with white marks on them; a terminal series of black points. Hind wing fuscous, the lower part of cell and area below it white.

Hab. Ecuador, Páramo de Alao, 12000′. *Exp.* 40 millim. This species is unknown to me; structural characters examined by Prof. Karsch.

*1662. Poliodes viola. (Plate XCIV. fig. 9.)

Poliodes viola, Druce, ined.

♀. Head and thorax purple-grey mixed with brown; palpi red-brown except at tips; abdomen brown, the crests tipped with grey, the base pale at sides, the anal tuft and ventral surface vinous red. Fore wing purple-grey irrorated with brown; subbasal line indistinct, waved, from costa to submedian fold; antemedial line indistinct, waved, oblique; claviform rather small, incompletely defined by black; orbicular and reniform large, almost confluent, defined by black, the former elongate elliptical, the latter ill-defined below and angled inwards on median nervure; postmedial line oblique from below costa to vein 6, then dentate, incurved below vein 4; subterminal line represented by a series of small wedge-shaped black marks, oblique from near apex to above vein 6 and from below vein 6 to above vein 2; some black points on termen. Hind wing white, the veins and marginal areas tinged with brown; cilia white at tips; the underside with small discoidal spot, traces of a postmedial line on costal area and some points on termen.

Hab. N. Peru, Huancabamba, 8000′, type in Coll. Druce. *Exp.* 50 millim.

Genus TRICHOPOLIA.

Trichopolia, Grote, Papilio, iii. p. 76 (1883) ..... Type. *dentatella*.

Proboscis aborted, minute; palpi porrect to beyond frons, fringed with long hair; frons smooth; eyes rather small, reniform, very hairy, and overhung by cilia; antennæ of male typically bipectinate with short branches at right angles to shaft, serrate at base and extremity; head and thorax clothed with long hair and without crests; tibiæ hairy; abdomen without dorsal crests and with lateral fringes of long hair. Fore wing rather narrow, the apex produced and

the termen obliquely curved; vein 3 from near angle of cell; 4, 5 from angle; 6 from upper angle; 9 from 10 anastomosing with 7, 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate.

A. Fore wing with the median nervure defined by grey streaks. *ursina.*
B. Fore wing with the median nervure not defined by grey ... *dentatella.*

1663. Trichopolia ursina.

Lathosea ursina, Smith, Can. Ent. xxx. p. 324 (1898); Dyar, Cat. Lep. N. Am. p. 173.

♂. Head and thorax clothed with grey mixed with olive-brown hair; sides of palpi and frons blackish; abdomen brownish grey.

Fig. 96.—*Trichopolia ursina*, ♂. ½.

Fore wing whitish grey tinged with brown, leaving the costal and terminal areas rather paler; the cell with two blackish fasciæ; a black fascia from base above submedian fold, and another below it from before middle to subterminal line; an oblique series of dashes from near termen above vein 6 where they are very short to vein 2 where they extend to cell; vein 1 more or less streaked with black; orbicular and reniform very small, pale, undefined, the former somewhat elliptical. Hind wing grey irrorated with brown and with brown terminal line; the underside with black discoidal lunule.

Hab. U.S.A., Colorado, Glenwood Springs (*Barnes*), 1 ♂, Garfield Co. *Exp.* 35–40 millim.

*1664. Trichopolia dentatella. (Plate LXXXVIII. fig. 16.)

Trichopolia dentatella, Grote, Papilio, iii. p. 77 (1883); Smith, Cat. Noct. N. Am. p. 164.

♂. Greyish fuscous tinged with olive. Fore wing with the markings very indistinct; traces of a waved antemedial line angled inwards on vein 1; claviform, orbicular, and reniform moderate, indistinctly defined by black, the orbicular round; traces of a minutely waved postmedial line, bent outwards below costa, excurved to vein 4, then oblique; a series of blackish streaks in interspaces of terminal area; a terminal series of black points. Hind wing white, with some dark points on termen.

Hab. U.S.A., Arizona. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in Brooklyn Inst. Arts & Sci.

Sect. II. Antennæ of male serrate and fasciculate.

*1665. Trichopolia serrata.

Trichopolia serrata, Smith, Proc. U.S. Nat. Mus. xxii. p. 479 (1900); Dyar, Cat. Lep. N. Am. p. 161.

♂. Head and thorax dark brown with a few ochreous scales; abdomen dull grey. Fore wing ochreous suffused with fuscous brown, the markings rather indistinct; subbasal line pale, defined by some black scales on each side; antemedial line double, filled in with pale colour, nearly erect, the outer line fine, interrupted; claviform broad, elongate, acute at extremity, fuscous defined by black; orbicular and reniform large, pale defined by black, the former round; postmedial line double, bent outwards below costa, excurved to vein 4, then slightly incurved, a black streak from it to termen below vein 5, the veins of terminal area darker; subterminal line pale, irregular, interrupted, without defining shades; a terminal series of small black lunules. Hind wing white, with a fine terminal fuscous line; the underside with the costal area irrorated with fuscous, a blackish discoidal spot.

Hab. U.S.A., Texas. *Exp.* 25–28 millim. This species is unknown to me.

Genus STRETCHIA.

Type.

Stretchia, H. Edw. Proc. Cal. Ac. Sci. v. p. 266 (1874) ..... *plusiæformis.*

Proboscis fully developed; palpi obliquely upturned, fringed with very long hair in front; frons smooth and with tuft of hair; eyes moderate, rounded, overhung by long cilia; antennæ of male bipectinate, with rather long branches tapering to base and extremity; head and thorax roughly clothed with long hair and scales, or hair only; the tegulæ produced to a distinct ridge, the pro- and metathorax with distinct crests; tibiæ fringed with long hair; abdomen with dorsal crest on basal segment and lateral fringes of hair. Fore wing with the apex produced and acute, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 stalked; 8 anastomosing with cell near base only.

A. Fore wing with the stigmata defined by black.
  a. Fore wing with the medial area suffused with red-brown. *muricina.*
  b. Fore wing with the medial area not suffused with red-brown.
    a^1. Hind wing wholly suffused with fuscous ..... *plusiæformis.*
    b^1. Hind wing white irrorated with fuscous ..... *variabilis.*
B. Fore wing with the stigmata pale, not defined by black.
  a. Fore wing dark grey ..... *inferior.*
  b. Fore wing silvery grey with a yellowish tinge and suffused with purple-brown ..... *saxea.*

1666. Stretchia muricina. (Plate LXXXVIII. fig. 17.)

Acerra muricina, Grote, Bull. Buff. Soc. Nat. Sci. iii. p. 85 (1875); Smith, Cat. Noct. N. Am. p. 208.

♂. Head and thorax clothed with purplish-red, rufous, and grey

scales and hair, redder in front; tegulæ with brown line near extremity; patagia edged by black above; tarsi with pale rings; abdomen red-brown. Fore wing red-brown, the ante- and post-medial areas suffused with purplish grey, the costal area irrorated with white; a slight subbasal line from costa to submedian fold; an oblique waved antemedial line; orbicular and reniform forming a broad V or U-shaped mark truncate below, whitish with grey irroration defined by some white, and with ferruginous patch on outer side of reniform, some deep brown or blackish suffusion in middle, at sides, and below it; postmedial line dentate and produced to points on the veins, bent outwards below costa and incurved below vein 4, some pale points on costa beyond it; terminal area whitish, more or less tinged with brown and extending to inner side of subterminal line at middle, this line being indistinct, pale, defined by a dark brown bar before it towards costa, angled outwards at vein 7 and slightly excurved at middle; slight dark streaks on the veins towards termen and a terminal series of dark lunules. Hind wing reddish brown; the underside grey irrorated and suffused with reddish brown, especially on marginal areas, a large black discoidal spot and indistinct sinuous postmedial line.

Hab. Canada, Br. Columbia, Vancouver, 4 ♂; U.S.A., Oregon. *Exp.* 32 millim.

1667. Stretchia plusiæformis.

Stretchia plusiæformis, H. Edw. Proc. Cal. Ac. Sci. v. p. 267 (1874); Smith, Cat. Noct. N. Am. p. 208.

♂. Head pale rufous, the frontal tuft white and deep rufous; tegulæ pale rufous at base, the tips white with three dark brown lines; thorax white, mixed with dark brown hair and scales; abdomen pale rufous. Fore wing bluish white irrorated with dark

Fig. 97.—*Stretchia plusiæformis*, ♂. ½.

brown; a slight dark streak below base of cell; a subbasal line from costa to submedian fold; antemedial line oblique, waved, obsolescent on inner area; orbicular and reniform confluent below and forming a broad U-shaped mark, indented below, whitish irrorated with brown, defined at sides and below by a dark brown line with slight rufous suffusion round it, the reniform with ferruginous mark on outer side and dark striga at lower angle of cell; postmedial line indistinct, minutely waved, well separated from reniform, excurved from costa to vein 4, then incurved; subterminal line indistinct, pale, defined by black-brown on inner side

prominently towards costa and inner margin, angled outwards at vein 7 and slightly excurved at middle; a terminal series of small dark lunules. Hind wing grey tinged with brown: the cilia ochreous white; the underside grey irrorated with dark brown, a discoidal spot and curved postmedial line.

Hab. U.S.A., Nevada, 1 ♂. *Exp.* 38 millim.

Subsp. 1. Much darker; fore wing rather broader; stigmata not conjoined, the orbicular oblique elliptical, the reniform oblique oblong, the area round them slightly darker; postmedial line closely approximated to reniform and straight from below costa to vein 4.

Hab. U.S.A., Colorado (*Bruce*), 1 ♂.

Larva. Head rounded, shining brown, sutures and mottlings on the sides pale. Cervical shield shining umber-brown, mottled with pale and a pale dorsal line; anal plate similar without central line. Body whitish, densely mottled with red-brown. Dorsal and lateral lines narrow, obscure, whitish; stigmatal band broad, white, obscure, red-filled, just covering the spiracles. Spiracles white, black-ringed; feet pale.

Food-plant, wild gooseberry.—H. G. D.

1668. Stretchia variabilis. (Plate LXXXVIII. fig. 18.)

Stretchia variabilis, Smith, Trans. Am. Ent. Soc. xviii. p. 119 (1891); id. Cat. Noct. N. Am. p. 208.

Head and thorax clothed with black-brown and blue-grey scales and hair mixed; frons with black bar; tegulæ with grey tips; tarsi banded with black; abdomen ochreous mixed with black. Fore wing blue-grey thickly irrorated with fuscous, the medial area suffused with fuscous except towards costa and inner margin; the veins streaked with black; subbasal line black, waved, from costa to submedian fold, in which it is followed by a black streak bent down to vein 1 basally; antemedial line defined by grey on inner side, oblique from costa to below cell, then erect; orbicular and reniform grey irrorated with fuscous and defined by black except above, the former somewhat oblique elliptical, and approximated or conjoined at lower extremity to the latter; postmedial line defined by grey on outer side, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line grey, slightly defined by black on inner side, more strongly towards costa and inner margin, angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing white, with a slight pinkish tinge and irrorated with brown scales; some purplish-brown hair on inner margin; a terminal brown line; the underside with black discoidal lunule showing through to upperside.

Hab. U.S.A., Colorado (*Bruce*), 2 ♂, 1 ♀. *Exp.* 40 millim.

*1669. Stretchia inferior.

Perigrapha inferior, Smith, Pr. U.S. Nat. Mus. x. p. 477 (1887); id. Cat. Noct. N. Am. p. 207.

Dark grey; tegulæ reddish at base. Fore wing very indistinctly

striated with brown; the lines obsolete; orbicular and reniform large, confluent, slightly paler and not defined by black. Hind wing uniform fuscous; the underside paler irrorated with fuscous, a large discoidal spot.

Hab. U.S.A., California. *Exp.* 30 millim. This species is unknown to me.

1670. Stretchia saxea. (Plate LXXXVIII. fig. 19.)

Xylina saxea, Leech, P. Z. S. 1889, p. 537.

♀. Head and thorax white irrorated with black; sides of palpi and frons tinged with rufous; tegulæ and patagia edged with black; prothoracic crest tipped with rufous; tibiæ and tarsi dark brown; abdomen red-brown. Fore wing silvery grey with a slight yellowish tinge and irrorated with purple-brown; antemedial area obliquely suffused with brown, and with black streaks on the veins; a black streak below base of cell; subbasal line represented by a dark streak on costa; antemedial line indistinct, irregularly waved, oblique from costa to submedian fold; claviform large, defined by black below, and with black fascia from its extremity to termen with brown suffusion above it; orbicular and reniform large, pale, very ill-defined, the former oblique and nearly conjoined to latter at lower extremity; postmedial line indistinct, waved, excurved from costa to vein 4, then oblique; subterminal line only defined by the area beyond it being dark except at apex and tornus, angled outwards at vein 7 and excurved at middle, crossed by short black streaks above and below vein 5, the lower further from termen; a terminal series of small black lunules. Hind wing red-brown; the underside paler rufous, with some dark irroration on costal and terminal areas, a black discoidal lunule.

Hab. Japan, Yokohama (*Pryer*), 1 ♀ type. *Exp.* 42 millim.

Genus MORRISONIA.

Type.

Morrisonia, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 53 (1874) ..... *sectilis*.

Proboscis fully developed; palpi obliquely porrect, the 2nd joint fringed with hair, the 3rd short; frons smooth; eyes large, rounded; tegulæ produced to a slight dorsal ridge; thorax clothed with hair and scales, and with divided ridge-like crest; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the cilia crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base.

Sect. I. Antennæ of male bipectinate with short branches, the apical part ciliated.

A. Fore wing with the ante- and postmedial lines well defined.

a. Fore wing without dark shade from base through submedian interspace.

a[1]. Fore wing with the postmedial line not angled inwards in submedian fold.

a^2. Fore wing with the postmedial line strongly incurved in submedian interspace.
a^3. Fore wing with the postmedial line angled outwards in submedian fold.
a^4. Fore wing tinged with olive-green ..... *plena.*
b^4. Fore wing not tinged with olive-green..... *insignis.*
b^3. Fore wing with the postmedial line not angled outwards in submedian fold.
a^4. Fore wing without oblique subbasal black streak above inner margin.
a^5. Fore wing with the streak below base of cell short ..... *mutans.*
b^5. Fore wing with the black streak below cell extending to postmedial line..... *paracausta.*
b^4. Fore wing with oblique subbasal streak above inner margin ..... *bromias.*
b^2. Fore wing with the postmedial line not incurved in submedian fold ..... *agorastis.*
b^1. Fore wing with the postmedial line angled inwards in submedian fold ..... *maccus.*
b. Fore wing with dark shade from base through submedian interspace ..... *sectilis.*
B. Fore wing with the ante- and postmedial lines almost obsolete except at costa ..... *bisulca.*

1671. Morrisonia plena.

Erana plena, Wlk. xxxiii. 744 (1865); Hudson, New Zealand Moths & Butterflies, p. 17, pl. iv. f. 32.
Mamestra sphagnea, Feld. Reis. Nov. pl. 109. f. 17 (1874).
Dianthœcia viridis, Butl. Cist. Ent. ii. p. 547 (1880).

♂. Head and thorax olive-green slightly mixed with reddish brown; palpi brown; tegulæ with medial black line; patagia with some black scales on outer edge; tarsi with black rings; abdomen brown mixed with grey, the anal tuft tinged with ochreous. Fore wing olive-green irrorated with brown and black; subbasal line double, waved, from costa to submedian fold, where it is often connected with the base by a black streak; a more or less prominent black patch on inner area before the double, oblique, waved antemedial line; claviform indistinctly defined by pale green; orbicular and reniform green defined by black and with their centres defined by black, the former elliptical, the latter often with pale reddish patch on its outer part; an indistinct waved medial line; postmedial line indistinctly double, dentate and produced to points on the veins, bent outwards below costa, incurved at discal fold and below vein 4, some pale points beyond it on costa; subterminal line pale green, defined on inner side by brown and fuscous, especially at middle and as a semicircular patch in submedian fold, on outer side strongly defined by black from below costa to above inner margin, angled outwards at vein 7 and dentate at veins 4 and 3; a terminal series of black lunules. Hind wing fuscous brown with a purplish tinge; cilia ochreous, with a dark line through them; the underside greyish irrorated with fuscous, a black discoidal spot.

♀. Darker; fore wing more suffused with brown and black, especially on medial area, the reniform with white spot.

Hab. New Zealand (*Oxley*), 1 ♂ type, (*Purdie*) 1 ♂, (*Mathew*) 1 ♂, 1 ♀, (*J. J. Walker*) 1 ♂, 1 ♀, Marlborough (*Skellon*), 2 ♀, type *viridis*, Otago (*Hutton*), 1 ♂, Dunedin (*Purdie*), 2 ♂, 1 ♀. *Exp.* 34–40 millim.

Larva. Hudson, New Zealand Moths & Butterflies, p. 17.

Greenish brown, yellower ventrally; subdorsal line with series of rust-red spots: oblique black marks on four posterior segments: lateral line represented by a series of black marks near posterior margin of each segment, the area between these markings clouded with yellow, green, or pink; anal segment yellow; head brown with two black stripes and some black points. Food-plants: grasses and low plants.

1672. **Morrisonia insignis.** (Plate LXXXVIII. fig. 20.)

Euplexia insignis, Wlk. xxxiii. 724 (1865); Hudson, New Zealand Moths & Butterflies, p. 16, pl. iv. ff. 29, 30.
Xylina turbida, Wlk. xxxiii. 754 (1865).
Hadena skelloni, Butl. Cist. Ent. ii. p. 547 (1880).
Mamestra polychroa, Meyr. Trans. N.Z. Inst. xix. p. 16 (1887).

Head and thorax dark rufous more or less mixed with greyish; tegulæ with black line near tips; patagia edged with some black; tarsi ringed with black; abdomen rufous mixed with greyish. Fore wing purplish rufous, suffused with black on medial area except at costa and inner margin, above and below vein 2 and on terminal area; the inner margin greyish, sometimes with some olive on basal and medial areas; a black streak in base of submedian fold; subbasal line represented by black streaks from costa and cell; a black patch above inner margin near base; antemedial line defined by grey on inner side, angled outwards below costa, oblique to vein 1, then bent inwards; claviform large, defined by grey and black at extremity and below; orbicular and reniform large, with pale annuli defined by black, the former rounded, more or less open above, the latter with black lunule on inner side and pale patch on outer; postmedial line dentate, bent outwards below costa, excurved to vein 4, then strongly incurved; subterminal line whitish, with some black and sometimes some olive before it, angled outwards at vein 7, dentate to near termen at veins 4, 3, and bent outwards to tornus; a terminal black line and series of points. Hind wing fuscous brown, the cilia pale at tips; the underside pale tinged with red and irrorated with brown, a discoidal lunule and sinuous postmedial line.

Hab. New Zealand (*J. J. Walker*), 2 ♂, 1 ♀, Auckland (*Oxley*), 1 ♂, 1 ♀ type & type *turbida*, (*Enys*) 1 ♂, Marlborough (*Skellon*, *Mathew*), 2 ♂, 2 ♀, type *skelloni*, Otago (*Hutton*), 1 ♂. *Exp.* 38–42 millim.

Eggs. Greenish white.

Larva. Young: semilooping; pale brown with black warts emitting several long bristles.

Adult: pale greenish brown, yellowish ventrally; subdorsal line represented by four oblique black marks on posterior segments;

lateral line formed by black marking near posterior edge of each segment; lateral area clouded with yellowish green or pink; anal segment dull yellow; head brown, with two black stripes and some black points. Food-plant, Dock. 11–12.

1673. **Morrisonia mutans.** (Plate LXXXVIII. fig. 21.)

Hadena mutans, Wlk. xi. 602 (1857), ♂; Hudson, New Zealand Moths & Butterflies, p. 18, pl. iv. ff. 34–6 & pl. iii. f. 15.
Hadena lignifusca, Wlk. xi. 603 (1857).
Xylina spurcata, Wlk. xi. 631 (1857), ♀.
Xylina vexata, Wlk. xxxiii. 755 (1865).
Mamestra angusta, Feld. Reis. Nov. pl. 109. f. 18 (1874).
Mamestra acceptrix, Feld. Reis. Nov. pl. 109. f. 19 (1874).
Hadena debilis, Butl. P. Z. S. 1877, p. 385, pl. xlii. f. 6.

♂. Head and thorax red-brown mixed with greyish; tegulæ with prominent medial black line edged with white above; patagia edged with some black; tarsi with pale rings; abdomen reddish brown. Fore wing red-brown slightly irrorated with fuscous, the costal area paler on basal half; the veins slightly streaked with black; a sinuous black streak below base of cell; the subbasal line represented by black striæ from costa; an oblique black bar on inner area before the antemedial line, which is double at costa, then interrupted, waved, oblique from costa to submedian fold; claviform moderate, defined by black; orbicular and reniform large, with slight greyish annuli defined by black, the former round or rather oblique elliptical, open above; an indistinct somewhat sinuous medial line; the medial area in and below cell suffused with black; postmedial line double at costa, then indistinct, somewhat dentate and produced to points on the veins, bent outwards below costa, incurved below vein 4 and angled inwards in submedian fold, some white points beyond it on costa; subterminal line whitish, defined on each side by black except towards costa, angled outwards at vein 7 and incurved in submedian fold, where there is a large dentate black mark before it; a terminal series of black points. Hind wing reddish brown; the cilia pale with a brown line through them; the underside pale irrorated with brown, a discoidal lunule and curved postmedial line.

Ab. 1. *lignifusca*. Fore wing without black suffusion in and below cell.

♀. Much greyer and with hardly any red-brown tinge; fore wing with the postmedial area whitish.

Ab. 2. *debilis*. Fore wing with the postmedial area not whitish.

Ab. 3. Fore wing whitish with slight brown suffusion.

Hab. New Zealand (*Sinclair*), 1 ♀, (*Colenso*) 1 ♀, (*Bolton*) 4 ♂, 10 ♀, type and types *lignifusca* and *spurcata*, (*Enys*) 1 ♂, 2 ♀, type *debilis*, (*J. J. Walker*) 3 ♀, Auckland (*Oxley*), 1 ♂, 1 ♀ type *vexata*, Otago (*Hutton*), 2 ♀, Marlborough (*Skelton*), 1 ♀, Wellington (*Mathew*), 2 ♀, Dunedin (*Purdie*), 1 ♂, 1 ♀. *Exp.* 34–42 millim.

Larva. Rather stout, with the anterior segments wrinkled; dorsal

surface usually reddish brown; lateral line broad and black; a series of subdorsal black stripes; ventral surface green. Sometimes the markings are hardly visible, and the colour is entirely green or brown. Food-plant, *Plantago*.

*1674. Morrisonia paracausta.

Mamestra paracausta, Meyr. Trans. N.Z. Inst. xix. p. 15 (1886); Hudson, New Zealand Moths & Butterflies, p. 15, pl. iv. f. 28.

Head whitish mixed with reddish ochreous, the frons with two black bars; thorax and abdomen grey mixed with white and black; tegulæ mixed with reddish ochreous and with medial black line; patagia black at outer edge; legs ochreous white mixed with black. Fore wing pale ochreous irrorated with fuscous and whitish towards costa, in female whiter; a sinuous black streak below cell to postmedial line defined below by brown to antemedial line, then by a brown patch above which is dilated on terminal area to apex and tornus; the lines slender, dentate, the antemedial line defined with whitish on inner side; claviform obsolete; orbicular and reniform hardly traceable; postmedial line incurved in submedian interspace, where it is defined by white on outer side; subterminal line represented by dentate white marks on veins 4 and 3 extending to termen and a double mark above tornus; cilia ochreous mixed with whitish and fuscous. Hind wing grey mixed with white; an indistinct postmedial line and interrupted terminal line.

Hab. New Zealand, Mount Arthur, Castle Hill, Invercargill. *Exp.* 37 millim. This species is unknown to me.

Larva closely resembles that of *M. ochthistis*.

*1675. Morrisonia bromias. (Plate LXXXVIII. fig. 22.)

Melanchra bromias, Meyr. Trans. Ent. Soc. 1902, p. 273.

♂. Head and thorax grey tinged with rufous and mixed with fuscous; frons with blackish lateral bars; tegulæ with diffused blackish medial band; patagia with black line near upper edge; abdomen pale rufous dorsally tinged with fuscous. Fore wing brown-pink suffused with fuscous, leaving pinkish patches near base, on inner medial area and beyond the cell; a black streak below base of cell and an oblique streak above inner margin before middle; subbasal line represented by two slight striæ from costa; antemedial line defined by pinkish on inner side, oblique from costa to submedian fold, angled inwards on veins 1 and again to inner margin; claviform moderate, defined by black; orbicular and reniform pinkish and fuscous with slight grey ocelli defined by black, the former rather quadrate, open above and below, the latter with whitish discoidal lunule at centre; postmedial line rather indistinct, defined by pinkish on outer side, dentate, bent outwards below costa, excurved to vein 4, then incurved, strongly in submedian

fold, some pale points beyond it on costa; subterminal line defined by the area beyond it being blackish, with somewhat dentate black marks beyond it and before it in submedian fold, dentate at veins 7, 6, 4, 3, and excurved to tornus, some whitish on it at veins 7, 6, 3, and a diffused patch at inner margin; a terminal series of small black lunules. Hind wing ochreous suffused with fuscous; a fine terminal line; cilia whitish with a brown line through them; the underside greyish irrorated with brown, a discoidal lunule and sinuous postmedial line.

Hab. New Zealand, Chatham I., type † in Coll. Meyrick. *Exp.* 42 millim.

*1676. Morrisonia agorastis. (Plate LXXXVIII. fig. 23.)

Mamestra agorastis, Meyr. Trans. N.Z. Inst. xix. p. 18 (1887); Hudson, New Zealand Moths & Butterflies, p. 18, pl. v. f. 30.

♂. Head and thorax bright red-brown with a purplish tinge and mixed with a few white scales; abdomen pale rufous. Fore wing purplish red-brown irrorated with grey: subbasal line defined by grey on each side and waved from costa to submedian fold; antemedial line defined by grey on inner side, waved and angled inwards on vein 1; claviform small, indistinctly defined by grey and blackish scales; orbicular and reniform moderate, with fuscous centres and white annuli defined by black, the former rounded and slightly produced on outer side; traces of a diffused curved medial line; postmedial line defined by grey on outer side, minutely dentate, bent outwards below costa and oblique below vein 4, some white points beyond it on costa; subterminal line whitish, somewhat dentate, defined on inner side by very indistinct small dentate brown marks, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing ochreous, uniformly suffused with brown; cilia ochreous white with a brown line through them; the underside whitish irrorated with brown, especially on costal and terminal areas, a discoidal spot, traces of a sinuous postmedial line and some black lunules on termen.

Hab. New Zealand, Wellington, Akaroa, Lake Guyon, type † ♂ in Coll. Meyrick. *Exp.* 38 millim.

1677. Morrisonia mucens.

Septis mucens, Hübn. Zutr. Ex. Schmett. iii. p. 9, ff. 415, 416 (1827); Smith, Cat. Noct. N. Am. p. 231.
Xylina multifaria, Wlk. xi. 628 (1857).
Xylina spoliata, Wlk. xi. 759 (1857).

Head and thorax ochreous white mixed with dark brown; frons with black bar; tegulæ with black medial line; patagia edged with black; abdomen brownish ochreous irrorated with black. Fore wing ochreous white more or less tinged with rufous, sometimes nearly uniformly suffused with dark brown; a sinuous black streak below base of cell, and a streak above inner margin near base;

the subbasal line represented by double oblique black striæ from costa; antemedial line double and distinct at costa, then less prominent, strongly angled outwards in submedian fold and above inner margin; claviform with its extremity slightly defined by black and with a dark brown or black patch between it and postmedial line; orbicular and reniform indistinctly defined by brown, the former large, oblique elliptical, the cell before and between them more or less tinged with dark brown; postmedial line dentate, double at costa, then single, bent outwards below costa,

Fig. 98.—*Morrisonia mucens*, ♂. ½.

excurved to vein 4, then incurved, distinctly defined by white on outer side below vein 2, some white points beyond it on costa; subterminal line only defined by triangular dark brown patches on termen between veins 7 and 4 and 3 and submedian fold, the apical and tornal areas tinged with bluish white; a terminal series of black points. Hind wing white slightly tinged with brown, the terminal area suffused with brown; the underside white irrorated with brown, a discoidal spot and curved punctiform postmedial line.

Hab. U.S.A., Middle, Southern, and Central States, Florida, St. John's Bluff (*Doubleday*), 3 ♂, type *spoliata*, 1 ♀ type *multifaria*, Missouri, Texas, 1 ♂. *Exp.* 34 millim.

1678. **Morrisonia sectilis.** (Plate LXXXVIII. fig. 24.)

Xylophasia sectilis, Guen. Noct. i. p. 141 (1852); Smith, Cat. Noct. N. Am. p. 232.

Morrisonia rileyana, Smith, Ent. Am. vi. p. 212 (1890); Smith, Cat. Noct. N. Am. p. 231.

♂. Head and thorax pale rufous; frons with black bar; tegulæ with black medial line; patagia black except at edges; tarsi black with pale rings; abdomen pale rufous irrorated with black. Fore wing ochreous tinged with rufous, a dark rufous and black fascia from base through submedian interspace to termen, extending to inner margin at base; black streaks below base of cell and above base of inner margin; subbasal line represented by double oblique black striæ from costa; antemedial line represented by double black striæ from costa, then less prominent and acutely angled outwards in submedian fold and above inner margin; claviform very obscurely defined; orbicular and reniform with rufous

centres and ochreous annuli, the former large, oblique elliptical, open above; postmedial line dentate, double at costa, bent outwards below costa, excurved to vein 4, then incurved, defined by whitish on outer side below vein 2; subterminal line only defined by triangular dark patches on termen between veins 7 and 4 and 3 and submedian fold; a terminal series of black points; cilia dark intersected by ochreous. Hind wing ochreous tinged with fuscous brown, especially on terminal area; the underside white irrorated with brown, a dark discoidal spot and curved punctiform postmedial line.

Ab. 1. Ground-colour much whiter and with slight rufous tinge.

Hab. U.S.A. (*Doubleday*), 1 ♂ type, Missouri, Texas, 2 ♂, Grote Coll. *Exp.* 38 millim.

1679. **Morrisonia bisulca.** (Plate LXXXVIII. fig. 25.)

Mamestra bisulca, Grote, Can. Ent. xiii. p. 230 (1881); Smith, Cat. Noct. N. Am. p. 232.

Head and thorax brown mixed with grey; patagia edged with blackish; tarsi blackish with pale rings; abdomen grey-brown. Fore wing grey, almost entirely suffused with reddish and dark brown; the veins streaked with black; a black fascia in submedian fold from base to vein 2; subbasal line represented by an oblique striga from costa; the antemedial line very indistinctly defined by whitish, angled outwards below costa and strongly above inner margin; orbicular and reniform small, whitish defined by black, the former irregularly elliptical, a black streak between them; postmedial line almost obsolete, dentate, bent outwards below costa, excurved to vein 4, then incurved, some white spots beyond it on costa; subterminal line defined by the area beyond it being dark with black streaks in the interspaces, strongly angled outwards at vein 7 and dentate nearly to termen at veins 4, 3; a terminal series of small black lunules. Hind wing brown, greyish at base; cilia with the tips whitish; the underside whitish thickly irrorated with brown, a dark discoidal spot.

Hab. U.S.A., Arizona, 1 ♂, 1 ♀ type. *Exp.* 40 millim.

Sect. II. Antennæ of male serrate and fasciculate.

A. Fore wing with the orbicular and reniform confluent ..... *victa.*
B. Fore wing with the orbicular and reniform not confluent.
  a. Fore wing with the reniform angled inwards on median nervure ..... *infidelis.*
  b. Fore wing with the reniform not angled inwards on median nervure.
    a^1. Fore wing with the ground-colour deep red-brown ..... *vitiosa.*
    b^1. Fore wing with the ground-colour rufous.
      a^2. Fore wing with white streak on base of subcostal nervure ..... *infensa.*
      b^2. Fore wing without white streak on base of subcostal nervure ..... *rubescens.*

c^1. Fore wing with the ground-colour grey.
a^2. Fore wing not tinged with olive-green.
a^3. Fore wing with the orbicular large, elongate ..... *ustistriga*.
b^3. Fore wing with the orbicular small, round ..... *lithias*.
b^2. Fore wing tinged with olive-green ..... *homoscia*.

1680. Morrisonia evicta.

Cloantha evicta, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 84, pl. 2. f. 18 (1873); Smith, Cat. Noct. N. Am. p. 232.
Cloantha vomerina, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 84, pl. 2. f. 17 (1873).

Head and thorax white slightly mixed with brown; palpi dark brown at sides; frons with black bar; tegulæ with black medial line and brown tips; thorax dark brown mixed with grey; abdomen ochreous white mixed with dark brown, the anal tuft with a purplish tinge. Fore wing dark reddish brown suffused with white, especially on base of costal area, some ochreous in cell and base of submedian fold; the veins streaked with black; a black streak in base of submedian fold; the subbasal line represented by double oblique striæ from costa; the antemedial line by a striga from costa, then interrupted, strongly angled outwards above vein 1 and inner margin and

Fig. 99.—*Morrisonia evicta*, ♂. ½.

slightly defined by white; orbicular and reniform ochreous with whitish annuli and defined by black above and below, the former produced as an ill-defined streak in cell towards base and with a prominent black streak below it, the latter angled inwards on median nervure and confluent with the former; postmedial line obsolescent, dentate, produced to white points on the veins, bent outwards below costa, excurved to vein 4, then incurved; the subterminal line only defined by the area beyond it being dark brown with blackish streaks in the interspaces, running obliquely to apex; vein 4 at extremity and vein 3 strongly defined by white streaks; a terminal series of small black lunules. Hind wing whitish tinged with brown, the terminal half strongly suffused with brown; the underside whitish, the costal and terminal areas irrorated with brown, a black discoidal spot and curved postmedian line.

Ab. 1. *vomerina*. Fore wing with the costal half whitish and strongly contrasting with the inner half which is blackish.

Hab. Canada; U.S.A., New York, 6 ♂, 2 ♀, type and type *vomerina*, New Jersey, Illinois. *Exp.* 36 millim.

1681. Morrisonia infidelis. (Plate LXXXVIII. fig. 26.)

Morrisonia infidelis, Grote, Can. Ent. xi. p. 206 (1879); Smith, Cat. Noct. N. Am. p. 232.

♂. Head and thorax purplish red-brown slightly mixed with grey; frons with black bar; tegulæ whitish at base and with strong black medial line; patagia edged with blackish; abdomen purplish brown and grey. Fore wing purplish brown, the costal and inner areas suffused with grey; the veins streaked with black; a diffused black fascia above basal half of vein 1; the subbasal line represented by indistinct double oblique striæ from costa; the antemedial line with an oblique striga from costa, then interrupted, indistinctly angled outwards above vein 1 and inner margin and obscurely defined by white; orbicular and reniform with rufous centres and greyish annuli defined by black, the former oblique elliptical, entire, the latter ill-defined above and angled inwards on median nervure to below the former; postmedial line very strongly dentate, indistinct and slightly defined by white on outer side, bent outwards below costa, excurved to vein 4, then incurved; the subterminal line only defined by the area beyond it being dark with blackish streaks in the interspaces, running obliquely to apex; vein 3 strongly defined on each side by white streaks; a terminal series of small black lunules; cilia purple-brown intersected by greyish. Hind wing whitish tinged with brown, strongly on terminal half; cilia white at tips; the underside whitish irrorated with brown, a discoidal point and postmedial series of striæ on the veins.

Hab. U.S.A., Michigan, 1 ♂ type. *Exp.* 40 millim.

1682. Morrisonia vitiosa.

Apamea vitiosa, Butl. P. Z. S. 1877, p. 384, pl. 42. f. 3; Hudson, New Zealand Moths & Butterflies, p. 20, pl. iv. f. 40.
Mamestra proteastis, Meyr. Trans. N.Z. Inst. xx. p. 45 (1888).

Head and thorax deep purplish red-brown mixed with black and a few whitish scales; tarsi with pale rings: abdomen fuscous, the anal tuft, sides, and ventral surface rufous. Fore wing deep purplish red-brown more or less completely suffused with black, the veins irrorated with a few whitish scales; subbasal line double, often filled in with ochreous, waved, from costa to submedian fold; antemedial line double, often filled in with ochreous, waved and angled inwards on vein 1; claviform rather small, defined by black; orbicular and reniform defined by black, the former oblique elliptical, the latter with ochreous spot with points above and below it or series of points on outer edge; postmedial line double, sometimes filled in with ochreous, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line rufous or ochreous, defined by minute dentate black marks on inner side and lunules on outer, angled outwards at vein 7 and dentate at veins 4 and 3, the area beyond it darker;

the termen crenulate, with series of white points on veins and small black lunules in interspaces. Hind wing dark reddish brown; the underside paler and irrorated with white, a dark discoidal lunule.

Hab. New Zealand (*Enys*, *Skellon*, *Mathew*), 4 ♂, 2 ♀, type. *Exp.* 36 millim.

Larva. Hudson, New Zealand Moths & Butterflies, p. 20, pl. iii. f. 16.

Very pale green above with numerous white lines and dots, dark green below with yellow dots; a dorsal series of black spots forming a triangle on each somite; thoracic and posterior somites with pink lateral stripe, entire in the young stages. Food-plant, *Melicope simplex*. 10.

1683. Morrisonia infensa. (Plate LXXXVIII. fig. 27.)

Orthosia infensa, Wlk. xi. 748 (1857); Hudson, New Zealand Moths & Butterflies, p. 23, pl. v. f. 12.
Mamestra arachnias, Meyr. Trans. N.Z. Inst. xix. p. 23 (1887).

♀. Head and thorax bright rufous; frons with black bar; tegulæ with black medial line defined by white behind: fore tibiæ whitish; abdomen dull reddish brown. Fore wing bright rufous, the veins rather darker; a white streak on subcostal nervure to antemedial line; subbasal line represented by a very oblique white-defined black striga from costa; antemedial line with black and white striæ at costa, then indistinct, double, dentate, oblique to submedian fold; claviform and reniform absent; orbicular defined by a curved white streak above; postmedial line with black and white striæ at costa, then indistinct, double, highly dentate, strongly bent outwards below costa and angled inwards in submedian fold; subterminal ine represented by a series of very slight white marks angled inwards in submedian fold. Hind wing fuscous with a reddish tinge; the cilia rufous; the underside ochreous white tinged with rufous and irrorated with brown, a dark discoidal spot and curved postmedial line.

Hab. New Zealand, 1 ♀ type, N. Island, Napier, S. Island, Blenheim. *Exp.* 40 millim.

1684. Morrisonia rubescens. (Plate LXXXVIII. fig. 28.)

Xylophasia rubescens, Butl. Cist. Ent. ii. p. 489 (1879); Hudson, New Zealand Moths & Butterflies, p. 25, pl. v. f. 18.

Head and thorax pale ferruginous; tegulæ with more or less developed black medial line; patagia with some black scales near upper edge; abdomen pale ferruginous, sometimes dorsally tinged with fuscous. Fore wing pale ferruginous; the veins with streaks formed of dark scales; the medial area below the cell usually suffused with darker ferruginous; subbasal line represented by double rufous striæ from costa and cell; antemedial line indistinct, double, highly dentate; claviform indistinctly defined by rufous;

orbicular and reniform defined by rufous, the former elongate elliptical, open above and with a black point on its inner side, the latter more or less filled in with black; traces of a waved medial line; postmedial line very indistinct, double filled in by paler colour, dentate and produced to a double series of dark points on the veins, bent outwards below costa and oblique below vein 4, sometimes nearly obsolete, some pale points beyond it on costa; subterminal line represented by a series of pale and rufous dentate marks, angled outwards at vein 7 and dentate to termen at veins 4, 3, with deep rufous patches beyond it at middle and tornus; a terminal series of dark points. Hind wing rufous suffused with fuscous, the termen and cilia redder; the underside pale rufous with some darker irroration, a slight discoidal spot and traces of a postmedial line.

Hab. New Zealand (*J. J. Walker*), 1 ♂, Otago (*Hutton*), 1 ♂ type, Dunedin (*Purdie*), 2 ♂, 1 ♀, Mount Arthur, Castle Hill, Lake Wakatipu. *Exp.* 44 millim.

1685. **Morrisonia ustistriga.** (Plate LXXXVIII. fig. 29.)

Xylina ustistriga, Wlk. xi. 630 (1857); Hudson, New Zealand Moths & Butterflies, p. 26, pl. v. f. 20.
Xylina lignisecta, Wlk. xi. 631 (1857).

Head and thorax purplish grey mixed with dark brown and more or less suffused with ferruginous; tegulæ with slight dark medial line; abdomen grey suffused with ferruginous except at base. Fore wing purplish grey, irrorated with dark brown and more or less suffused with ferruginous; subbasal line represented by double black striæ from costa and cell; antemedial line represented by double black striæ from costa, then very indistinct, single, oblique to submedian fold, angled inwards on vein 1 and outwards above inner margin; claviform strongly defined by black, acute at extremity, often with a black streak from it to postmedial line; orbicular and reniform large, strongly defined by black, the former open above, produced on outer side and often connected by a black streak with the latter; postmedial line represented by double striæ at costa, then indistinct, minutely dentate, incurved below vein 4, in submedian fold oblique and prominently black defined by white on outer side, some white points beyond it on costa; subterminal line grey, defined by slight dentate black marks before it below costa and at middle, angled outwards at vein 7 and dentate at veins 4, 3, in submedian fold angled inwards and connected with postmedial line by brown suffusion with a black streak on it; a terminal series of black lunules; cilia grey, with a rufous line through them. Hind wing fuscous brown, the cilia whitish at tips; the underside pale irrorated with brown and the costal area suffused with rufous, a discoidal spot and curved postmedial line.

♀ without any ferruginous or rufous tint.

Hab. New Zealand (*Colenso, Bolton, J. J. Walker*), 4 ♂, 4 ♀,

type & type *lignisecta*, Auckland (*Oxley*), 1 ♂, Otago (*Hutton*), 1 ♂, 1 ♀, Marlborough (*Skellon*), 2 ♀, Dunedin (*Purdie*), 1 ♂, 1 ♀. *Exp.* 42–48 millim.

Larva. On honeysuckle.

*1686. Morrisonia lithias.

Mamestra lithias, Meyr. Trans. N.Z. Inst. xix. p. 17 (1886); Hudson, New Zealand Moths & Butterflies, p. 17, pl. iv. f. 33.

♂. Head and thorax white thickly irrorated with fuscous and black; patagia with two indistinct black streaks; abdomen grey; legs grey irrorated with white and banded with black and white, the spurs with black medial band. Fore wing fuscous irregularly suffused with grey, the veins irrorated with black and white; the lines double filled in with white, minutely dentate: claviform small, round, black with white point at centre; orbicular and reniform with fuscous centres and white annuli defined by black, the former small, round; subterminal line pale, angled outwards at vein 7 and dentate to near termen on veins 4, 3; cilia chequered grey and white. Hind wing grey with a darker terminal line; cilia white with a grey line through them.

Hab. New Zealand, Castle Hill. *Exp.* 33 millim. This species is unknown to me.

1687. Morrisonia homoscia. (Plate LXXXVIII. fig. 30.)

Mamestra homoscia, Meyr. Trans. N Z. Inst. xix. p. 21 (1886); Hudson, New Zealand Moths & Butterflies, p. 21, pl. v. f. 7.

♀. Head, thorax, and abdomen grey mixed with red-brown. Fore wing pale grey-brown thickly irrorated and suffused with dark brown and tinged with olive-green, the veins irrorated with white; the subbasal line represented by double dark striæ from costa and cell; antemedial line indistinct, double, waved; claviform absent; orbicular and reniform with indistinct pale annuli defined by black, the former round; traces of a waved medial line; postmedial line double, somewhat dentate and produced to black and white points on the veins, bent outwards below costa and oblique below vein 4, some pale points beyond it on costa; subterminal line pale defined by brown on inner side, slightly angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of small black lunules. Hind wing dark brown; the cilia pale at tips; the underside whitish thickly irrorated with brown, a slight discoidal spot and curved postmedial line.

Hab. New Zealand, Marlborough Province (*Skellon*), 1 ♀, Wellington. *Exp.* 44 millim.

Larva. Hudson, New Zealand Moths & Butterflies, pl. 3. f. 10.

Dorsal area green, with whitish dorsal and subdorsal lines with series of white points between them; lateral and ventral areas brown; stigmata red, the substigmatal line pale brown. Food-plant, *Pomaderris ericifolia*.

Sect. III. Antennæ of male ciliated.

A. Pectus and ventral surface of abdomen of male clothed with long rough hair, forming lateral frieges on the latter which has long tufts of hair from base.
  a. Fore wing with the costal area paler than ground-colour. . *stipata.*
  b. Fore wing with the costal area not paler than ground-colour.
    a^1. Fore wing with the subterminal line rufous..... *dotata.*
    b^1. Fore wing with the subterminal line whitish ..... *ochthistis.*

1688. Morrisonia stipata.

Xylina stipata, Wlk. xxxiii. 753 (1865); Hudson, New Zealand Moths & Butterflies, p. 25, pl. v. f. 17.

Head and thorax ferruginous mixed with ochreous and usually more or less black; fore tibiæ pale with rufous points, the tarsi ringed with black. Fore wing ochreous suffused with rufous, and more or less with fuscous except on costal and postmedial areas: the veins irrorated with dark scales; the subbasal line represented

Fig. 100.—*Morrisonia stipata*, ♂. ½.

by double dark striæ from costa and an ochreous striga from cell intersecting an ill-defined black streak above vein 1; a dentate mark above inner margin near base; antemedial line double, filled in with ochreous, waved, oblique from costa to median nervure, angled inwards on vein 1; claviform short and broad, defined by black; orbicular and reniform defined by blackish, the former very oblique elliptical, with rufous centre, the latter with fuscous centre and incomplete ochreous annulus forming a lunule on outer edge; an indistinct medial line oblique from costa to median nervure, then waved; postmedial line double filled in with ochreous, dentate and produced to a double series of dark points on the veins, bent outwards below costa and incurved below vein 4, some pale points on costa beyond it; subterminal line ochreous more or less completely defined by rufous on inner side, angled outwards at vein 7 and dentate to termen on veins 4 and 3, the area beyond it suffused with fuscous except at apex; a terminal series of small black lunules; cilia chequered rufous and fuscous. Hind wing fuscous with a rufous tinge; a pale subterminal spot on vein 2; cilia ochreous intersected with rufous; the underside ochreous tinged with

rufous, the costal and terminal areas irrorated with black, a discoidal lunule and sinuous postmedial line with dark streaks at the veins.

Hab. New Zealand (*J. J. Walker*), 2 ♂, 1 ♀, Auckland (*Oxley*), 1 ♀ type, (*Enys*) 2 ♀, (*Mathew*) 1 ♂, Otago (*Hutton*) 1 ♂, Dunedin (*Purdie*) 1 ♂, 2 ♀. *Exp.* 48 millim.

1689. **Morrisonia dotata.** (Plate LXXXVIII. fig. 31.)

Dasypolia dotata, Wlk. xi. 522 (1857); Hudson, New Zealand Moths & Butterflies, p. 24, pl. v. f. 16.

♂. Head and thorax dark rufous, the tegulæ and patagia edged with dark brown; spurs banded with ochreous; abdomen rufous, darker dorsally. Fore wing deep rufous suffused in part with fuscous, chiefly on medial and terminal areas; subbasal line double, waved, from costa to submedian fold; a curved mark above inner margin near base; antemedial line double, waved, oblique from costa to submedian fold, then angled inwards on vein 1; claviform well developed, filled in with blackish and defined by black; orbicular and reniform large, defined by black, the former oblique elliptical, with fuscous centre, the latter with its inner part fuscous, its outer pale; an indistinct waved medial line; postmedial line double, the outer indistinct, dentate and produced to short streaks on the veins, bent outwards below costa and incurved below vein 4, some pale points beyond it on costa; subterminal line rufous, defined on inner side by a black and brown shade, angled inwards in submedian fold, the area beyond it darker, waved, slightly angled outwards at vein 7 and excurved at middle; a fine waved black terminal line; cilia chequered rufous and fuscous. Hind wing dark rufous tinged with fuscous; the underside irrorated with grey and whitish at base, a discoidal lunule, waved postmedial line, and diffused subterminal band.

Hab. New Zealand (*Colenso*), 1 ♂ type, Nelson, Wakapuaka. *Exp.* 50 millim.

1690. **Morrisonia ochthistis.** (Plate LXXXVIII. fig. 32.)

Mamestra ochthistis, Meyr. Trans. N.Z. Inst. xix. p. 20 (1887); Hudson, New Zealand Moths & Butterflies, p. 20, pl. iv. f. 42, & pl. iii. f. 16 (larva).

Head and thorax bright rufous mixed with black; tegulæ with ochreous medial line; tarsi banded with black; abdomen rufous, tinged with fuscous in female. Fore wing bright rufous more or less irrorated and suffused with black, especially on medial area; subbasal line double, waved, from costa to vein 1; antemedial line double, irregularly waved; claviform moderate, defined by black; orbicular and reniform defined by black, the former oblique elliptical, the latter often with whitish spot or points on its outer edge; a blackish medial shade, oblique from costa to cell; postmedial line double, strongly dentate, bent outwards below costa and incurved below vein 4, some pale points beyond it on costa; subterminal line ochreous, defined by fuscous on inner side, more

strongly at middle, the area beyond it suffused with fuscous or with dark streaks on the veins, angled outwards at vein 7 and dentate at veins 4 and 3; termen crenulate, with waved black line. Hind wing fuscous brown with a reddish tinge; the underside pale irrorated with brown, a black discoidal lunule and curved postmedial line.

Hab. New Zealand, Dunedin (*Enys*, *Purdie*, *J. J. Walker*), 2 ♂, 5 ♀, Christchurch, type † in Coll. Meyrick, Wellington. *Exp.* 36 millim.

Larva. Green, with white lines and points on dorsal area and yellow points on ventral; a pink lateral stripe on first five and last two somites, in early stages entire; claspers pinkish. Food-plant, *Melicope simplex*.

B. Pectus and ventral surface of abdomen in male normally scaled.
  a. Fore wing with the subterminal line not dentate ..... *tartaræa*.
  b. Fore wing with the subterminal line more or less dentate.
    a^1. Fore wing with black streak below base of cell.
      a^2. Fore wing with the cell filled in with black ..... *omoplaca*.
      b^2. Fore wing with the cell not filled in with black ..... *confusa*.
    b^1. Fore wing without black streak below base of cell.
      a^2. Fore wing with the subterminal line pale, well-defined.
        a^3. Fore wing with the postmedial line acutely angled inwards in submedian fold ..... *lignana*.
        b^3. Fore wing with the postmedial line incurved in submedian fold ..... *morosa*.
      b^2. Fore wing with the subterminal line represented by indistinct dentate dark marks.
        a^3. Fore wing with black suffusion on inner area ... *prionistis*.
        b^3. Fore wing without black suffusion on inner area.
          a^4. Fore wing with the ground-colour brownish grey ..... *temperata*.
          b^4. Fore wing with the ground-colour purplish grey..... *phricias*.

1691. **Morrisonia tartaræa.** (Plate LXXXIX. fig. 1.)

Graphiphora tartaræa, Butl. P. Z. S. 1877, p. 384, pl. xlii. f. 2; Hudson, New Zealand Moths & Butterflies, p. 21, pl. v. f. 6.

Head and thorax dark red-brown, the head and tegulæ greyer; abdomen dark brown, the anal tuft rufous. Fore wing dark brown tinged with grey, the inner medial and terminal areas with rufous; subbasal line double filled in with grey, waved, from costa to submedian fold; antemedial line double filled in with grey, waved; claviform moderate, defined by black; orbicular and reniform reddish incompletely defined by black, the former oblique elliptical; the area between and beyond them darker; a dark medial shade, oblique from costa to median nervure and angled inwards in submedian fold; postmedial line represented by double dark striæ from costa, then by a slight series of points, bent outwards below costa and incurved below vein 4; subterminal line blackish towards costa, then pale defined by rufous, angled outwards at vein 7 and

excurved at middle. Hind wing dark brown, the cilia pale at tips; the underside irrorated with grey, a slight discoidal lunule and curved postmedial line.

Hab. New Zealand (*Enys*), 1 ♂ type, (*Mathew*) 1 ♀, (*J. J. Walker*) 1 ♀, N. Island, Murimutu Plain, S. Island, Christchurch. *Exp.* 42 millim.

*1692. **Morrisonia omoplaca.** (Plate LXXXIX. fig. 2.)

Mamestra omoplaca, Meyr. Tr. N.Z. Inst. xix. p. 24 (1887); Hudson, N. Zealand Moths & Butterflies, p. 23, pl. v. f. 13.

♀. Head and thorax pale rufous mixed with grey, the palpi and vertex of head with some blackish; tegulæ with black medial line and grey and fuscous tips; prothoracic crest grey and fuscous; patagia fuscous tinged with grey; tibiæ irrorated with black; abdomen pale ochreous brown, the ventral surface irrorated with black. Fore wing ochreous white suffused and irrorated with rufous; an oblique band from vein 1 near base to cell and the cell except at base filled in with black; a sinuous black streak below base of cell defined by ochreous above; the subbasal line represented by two oblique black striæ from costa; antemedial line double, waved, angled inwards on vein 1 and strongly outwards above inner margin; claviform moderate, fuscous black defined by black; orbicular and reniform fuscous with whitish annuli defined by black, the former rather elongate elliptical, the latter with whitish discoidal lunule; postmedial line indistinctly double, strongly dentate, bent outwards below costa, oblique below vein 4, and strongly dentate inwards in submedian fold; subterminal line pale, defined on inner side by slight, somewhat dentate rufous marks and some fuscous at costa, the area beyond it mostly suffused with black except at apex, angled outwards at vein 7 and slightly dentate at veins 4 and 3; a terminal series of small black lunules; cilia with a fine pale line at base. Hind wing pale, uniformly suffused with fuscous brown, the cilia whitish with a fuscous line through them; the underside greyish irrorated with brown, a slight discoidal spot and traces of a sinuous postmedial line.

Hab. New Zealand, Lake Coleridge, Rakaia, type † ♀ in Coll. Meyrick. *Exp.* 42 millim.

1693. **Morrisonia confusa.**

Auchmis confusa, Hübn. Zutr. Ex. Schmett. iii. ff. 495–6 (1827); Smith, Cat. Noct. N. Am. p. 232.
Xylina infructuosa, Wlk. xi. 627 (1857).

♂. Head and thorax red-brown mixed with grey and black; frons with black bar; tegulæ with black medial line; patagia edged with black; tarsi banded with black; abdomen grey irrorated with red-brown and fuscous. Fore wing greyish suffused with red-brown and irrorated with black, the veins streaked with black; a sinuous black streak in base of submedian fold; the subbasal line

represented by double black striæ from costa; the antemedial line with a dark striga from costa, then indistinct and strongly angled outwards above vein 1 and inner margin; claviform incompletely defined by black; orbicular and reniform with obscure ochreous annuli incompletely defined by black, the former oblique elliptical; the postmedial line strongly dentate, black defined by ochreous on outer side, strongly bent outwards below costa, excurved to vein 4, then oblique; the subterminal line very obscurely defined by the

Fig. 101.—*Morrisonia confusa*, ♂. ½.

area beyond it being slightly darker, with blackish streaks in the interspaces, running obliquely to apex, and with pale dentate marks on veins 4 and 3; a terminal series of small black lunules; cilia intersected with ochreous. Hind wing ochreous white tinged with brown, especially on terminal area; the veins dark; a dark terminal line; the underside whitish, the costal and terminal areas irrorated with brown, a discoidal spot and curved postmedial series of striæ on the veins.

Hab. Canada; U.S.A., Eastern States, 3 ♂ type *infructuosa*, Texas, 1 ♂, California. *Exp.* 40 millim.

Larva. Head round, shining light red-brown, reticulate in lighter and paler over the clypeus. Body shaded in vinous red, with a rounded, quadrate, deep vinous patch laterally above the spiracle on joints 2 to 12. Fine white dorsal, lateral, and suprastigmatal lines. Shields not chitinized, concolorous; spiracles white, finely black-rimmed. Food-plants: Willow, etc.—H. G. D.

1694. **Morrisonia lignana.** (Plate LXXXIX. fig. 3.)

Hadena lignana, Wlk. xi. 758 (1857); Hudson, New Zealand Moths & Butterflies, p. 26, pl. v. f. 19.

Head and thorax brownish grey slightly mixed with rufous; tegulæ and patagia with black lines near upper edge; abdomen grey irrorated with fuscous, the anal tuft pale rufous. Fore wing brownish grey irrorated with fuscous and sometimes tinged with purplish, the costal area and veins rather paler; the subbasal line represented by double black striæ from costa and cell, interrupting a slight black streak above vein 1; antemedial line double, dentate, oblique from costa to median nervure, and strongly angled inwards on vein 1; claviform short and broad, defined by black; orbicular and reniform defined by black, the former elongate elliptical, open

above and with black point on its inner side, the latter with its lower part filled in with fuscous and slightly angled inwards on median nervure; traces of a waved medial line; postmedial line more or less indistinct, strongly dentate and produced to a series of black points on the veins, bent outwards below costa and oblique below vein 4, some pale points beyond it on costa; subterminal line ochreous white, defined on inner side by fuscous marks at middle and below vein 3, angled outwards at vein 7 and dentate to termen on veins 4 and 3; a terminal series of black points. Hind wing fuscous, with slight pale mark on termen at submedian fold; cilia ochreous, with a brown line near base; the underside whitish irrorated with fuscous, a discoidal spot and more or less indistinct postmedial line.

Hab. New Zealand (*Earl*), 1 ♂ type, (*Enys*) 1 ♀, (*Mathew*) 1 ♀, Marlborough (*Skellon*) 1 ♀, Wellington, Mount Hutt. *Exp.* 42 millim.

1695. **Morrisonia morosa.** (Plate LXXXIX. fig. 4.)

Xylophasia morosa, Butl. Cist. Ent. ii. 543 (1880).
Mamestra pelistis, Meyr. Trans. N.Z. Inst. xix. p. 20 (1887); Hudson, N. Zealand Moths & Butterflies, p. 19, pl. v. ff. 3, 4.

Head and thorax red-brown mixed with grey and a few dark scales; frons with black bar; tegulæ with medial black line; abdomen grey-brown. Fore wing pale brown, more or less strongly suffused with purplish red; subbasal line double, waved, from costa to vein 1; antemedial line double, waved, oblique; claviform small, defined by black; orbicular and reniform with fuscous centres, and pale annuli defined by black, the former round; postmedial line indistinct, minutely dentate and produced to black and pale points on the veins, bent outwards below costa and slightly incurved below vein 4, some pale points on costa beyond it; subterminal line grey or ochreous, angled outwards at vein 7 and dentate at veins 4 and 3, the area beyond it suffused with fuscous except at apex; a terminal series of black points. Hind wing fuscous brown; the cilia whitish at tips; the underside whitish irrorated with brown, a slight discoidal spot and curved postmedial line.

Hab. New Zealand (*Skellon*, *Mathew*), 2 ♂, 1 ♀ type, Wellington, Paikakariki, Akaroa, type † *pelistis* in Coll. Meyrick, Lake Coleridge. *Exp.* 40 millim.

*1696. **Morrisonia prionistis.** (Plate LXXXIX. fig. 5.)

Mamestra prionistis, Meyr. Tr. N.Z. Inst. xix. p. 27 (1887); Hudson, N. Zealand Moths & Butterflies, p. 27, pl. v. f. 21.

♀. Head and thorax grey mixed with pale brown; sides of palpi and frons with some dark brown; tegulæ dark brown near tips; patagia with black stripe on upper edge and on lower edge near base; abdomen red-brown. Fore wing grey irrorated with

brown; a pale rufous fascia in discal fold from before middle to subterminal line; a similar fascia in submedian fold extending to inner margin at base and to termen; the inner area suffused with fuscous from before middle to near tornus; subbasal line indistinct, angled outwards below costa and cell; antemedial line indistinct, double, dentate, strongly angled outwards below cell and above inner margin; orbicular and reniform indistinct and ill-defined, except the latter on outer side, where it has some diffused black beyond it at lower angle of cell, the former rounded, the veins beyond the cell grey defined by fine black streaks; postmedial line obsolete except for two dark striæ from costa and in submedian interspace, where it is strongly angled inwards; subterminal line represented by oblique strigæ from termen at and below apex, then by conjoined dentate rufous marks; a terminal series of small black lunules; cilia grey intersected with brown. Hind wing dark red-brown; cilia white at tips; the underside pale, suffused and irrorated with pale red-brown; a small discoidal lunule.

Hab. New Zealand, Wellington, type † ♀ in Coll. Meyrick, Rakaia. *Exp.* 48 millim.

1697. **Morrisonia temperata.** (Plate LXXXIX. fig. 6.)

Bryophila temperata, Wlk. xv. 1648 (1858); Hudson, New Zealand Moths & Butterflies, p. 9.
Xylina inceptura, Wlk. xv. 1736 (1858).
Xylina deceptura, Wlk. xv. 1737 (1858).

♂. Head and thorax reddish or dark brown and grey mixed; abdomen pale reddish brown. Fore wing grey-brown with a reddish tinge and some fuscous irroration, the veins streaked with fuscous; subbasal line represented by double dark striæ from costa and cell; antemedial line represented by double dark points on costa, median nervure, and vein 1; claviform sometimes partly defined by fuscous; orbicular and reniform with slight whitish annuli defined by fuscous, the former rather elongate elliptical, the latter somewhat angled inwards on median nervure; postmedial line more or less indistinct, dentate, and with a series of points beyond it on the veins, bent outwards below costa and oblique below vein 4; subterminal line represented by some more or less indistinct dentate dark marks at middle; a terminal series of dark points. Hind wing fuscous brown; the cilia pale at tips; the underside pale with slight discoidal lunule and curved postmedial line.

♀ greyer.

Hab. New Zealand (*Churton*), 3 ♂, 2 ♀, type and types *inceptura* nd *deceptura*. *Exp.* 36–40 millim.

1698. **Morrisonia phricias.** (Plate LXXXIX. fig. 7.)

Mamestra phricias, Meyr. Trans. N.Z. Inst. xx. p. 46 (1888); Hudson, New Zealand Moths & Butterflies, p. 27, pl. v. f. 22.

Palpi with the 3rd joint long and dilated at extremity; thorax

with high triangular crest. Head and thorax grey mixed with brown; tegulæ with dark line at tips; tarsi with pale rings; abdomen ochreous grey suffused with fuscous. Fore wing silvery purplish grey irrorated and suffused with fuscous, the veins with dark streaks; a slight black streak below base of cell; slight traces of the subbasal line; antemedial line very indistinct, double, oblique from costa to below the cell, then dentate; claviform absent; orbicular and reniform moderate, indistinct, grey defined by fuscous; a slight medial shade, oblique from costa to median nervure; postmedial line indistinct, bent outwards below costa, then very highly dentate, oblique; subterminal line very slightly defined by fuscous on outer side, angled outwards at vein 7 and dentate at veins 4 and 3; a terminal series of black points. Hind wing fuscous brown, the cilia whitish; the underside whitish suffused with brown, traces of a discoidal spot and curved postmedial line.

Hab. New Zealand, (*Enys*) 2 ♂, (*J. J. Walker*) 1 ♂, 1 ♀, Marlborough (*Skellon*) 2 ♂. *Exp.* 40–44 millim. Type † in Coll. Meyrick.

Genus **PERSECTANIA**, nov.

Type, *P. evingi.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint fringed with hair in front; frons with slight rounded prominence with corneous plate below it; head and thorax clothed with hair and hair-like scales, the tegulæ produced into a slight dorsal ridge; the prothorax with divided crest, the metathorax with spreading crest; tibiæ fringed with hair; abdomen with dorsal crest on 1st segment and lateral tufts of hair. Fore wing rather produced, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

Sect. I. Antennæ of male serrate and fasciculate; pectus and abdomen clothed with rough hair, the latter with long sublateral tufts from base.

1699. Persectania evingi.

Xylophasia ewingii, Westw. Proc. Ent. Soc. ii. p. 55, pl. 20. f. 1 (1837).
Chloantha composita, Guen. Noct. ii. p. 114 (1852); Hudson, New Zealand Moths & Butterflies, p. 22, pl. v. ff. 8, 9, & pl. iii. f. 7.
Leucania aversa, Wlk. ix. 113 (1856).
Mamestra maori, Feld. Reis. Nov. pl. 109. f. 24 (1874).
Morrisonia peracuta, Morr. Bull. Buff. Soc. Nat. Sci. ii. p. 114 (1874); Smith, Cat. Noct. N. Am. p. 232.
Leucania dentigera, Butl. Cist. Ent. ii. p. 542 (1880).

Head and thorax grey tinged with pale or dark brown; frons whitish with dark bar; tegulæ with black medial line edged with white above; patagia with some black scales near upper edge; abdomen whitish tinged with brown and with some fuscous sublateral spots. Fore wing grey-white, more or less strongly irrorated with fuscous and suffused with fuscous or brown; a black streak below basal half of cell; the veins and the interspaces of terminal

half with slight dark streaks; subbasal line represented by a slight very oblique black streak from base of costa; the antemedial line indistinct, double, very highly dentate, usually with an oblique black streak before it above inner margin; claviform represented by obscure black streaks above and below; orbicular and reniform

Fig. 102.—*Persectania eringi*, ♂. ½.

small, with whitish annuli defined by black, the former elongate and more or less confluent with the latter; postmedial line bent outwards below costa, then very highly and rather irregularly dentate, most strongly in submedian fold; subterminal line whitish, defined by black on outer side, the area before it pale, beyond it suffused with brown or fuscous, arising from apex, with shortening dentitions on veins 6, 5, then dentate to termen on veins 4, 3, and 1; a terminal series of triangular black points; cilia intersected with whitish. Hind wing fuscous brown, the basal area paler or nearly white; cilia white, brownish at base; the underside white, a small discoidal spot, the terminal area fuscous from apex to vein 2.

Hab. ign., type ♀ *aversa* and type ♀ *peracuta*; Queensland, 1 ♀; New South Wales, (*Raynor*) 4 ♂, 2 ♀; Victoria, Gisborne (*Lyell*) 2 ♂; S. Australia (*Bakewell*) 1 ♀; Tasmania, Hobart, (*Norman*) 1 ♂, (*Butler, Smith, Allport*) 2 ♂, 3 ♀; New Zealand, (*J. J. Walker*) 1 ♀, Auckland (*Oxley, Sinclair*) 1 ♂, 5 ♀, Dunedin (*Purdie*) 1 ♂, Marlborough (*Skellon*) 2 ♀, type *dentigera*. *Exp.* 34–44 millim.

Larva bright reddish brown; dorsal stripe broad, black; subdorsal stripe narrower, edged with white; lateral stripe dull red, white, and black; ventral surface, head, and prolegs greenish grey with black markings; spiracles black. Food-plants, Grasses. 1 & 9.

Sect. II. Antennæ of male with bristles and cilia; pectus and abdomen more smoothly scaled.

A. Fore wing with the orbicular and reniform obsolete ..... *aulacias.*
B. Fore wing with the orbicular represented by a streak confluent with the reniform..... *steropastis.*
C. Fore wing with the orbicular and reniform separate ..... *atristriga.*

1700. Persectania aulacias. (Plate LXXXIX. fig. 8.)

Leucania aulacias, Meyr. Tr. N.Z. Inst. xix. p. 11 (1887).
Leucania arotis, Meyr. Tr. N.Z. Inst. xix. p. 11 (1887); Hudson, New Zealand Moths & Butterflies, p. 12, pl. iv. f. 18.

Head and thorax ochreous slightly tinged with rufous; sides of

palpi and frons with some black scales; tegulæ with black medial line; upper edge of patagia and prothoracic crest with some black scales; legs with fine blackish streaks; abdomen ochreous irrorated with brown. Fore wing ochreous tinged with rufous; the veins black-brown, defined by fine whitish streaks; the interspaces with diffused reddish-brown streaks; traces of a sinuous streak below the cell from base to below end of cell, upturned at extremity; a slight antemedial point on vein 1; a slight oblique streak above middle of inner margin; a postmedial series of black points on the veins, bent outwards below costa and oblique below vein 4; faint traces of a highly irregularly dentate pale subterminal line represented by an oblique streak below vein 7 and another from vein 3 at termen to submedian fold. Hind wing fuscous brown, the cilia grey; the underside ochreous white, irrorated and partly suffused with brown, a slight discoidal lunule, indistinct sinuous postmedial line, and some black striæ on termen.

Ab. 1. *arotis*. Hind wing with the cilia white, tinged with ochreous and brown at base.

Hab. New Zealand (*J. J. Walker*), 1 ♂, Wellington, Blenheim, Christchurch, in Coll. Meyrick, Rakaia. *Exp.* 46 millim.

1701. **Persectania steropastis.** (Plate LXXXIX. fig. 9.)

Mamestra steropastis, Meyr. Tr. N.Z. Inst. xix. p. 22 (1887); Hudson, New Zealand Moths & Butterflies, p. 23, pl. v. ff. 10, 11.

Head, thorax, and abdomen rufous; sides of palpi and frons blackish; tegulæ with medial black line. Fore wing rufous; the veins with dark streaks; a dark streak slightly defined by grey above below base of cell and another above inner margin before middle; antemedial line obsolete towards costa, very strongly angled outwards in submedian fold and above inner margin and inwards on vein 1; a dark streak in lower part of cell; reniform represented by slight dark and whitish marks on upper discocellular and lower angle of cell, and a curved streak below angle; postmedial line very strongly angled inwards in submedian fold and outwards on vein 1, otherwise obsolete; interspaces of terminal area with dark streaks, the subterminal line being represented by obliquo white streaks below veins 7, 4, 3. Hind wing deep fuscous brown, the cilia pale at tips; the underside grey tinged with reddish and irrorated with black.

Hab. New Zealand, Dunedin (*Purdie*), 3 ♂, 2 ♀, Akaroa (*J. J. Walker*), 1 ♂, Napier, Blenheim, Christchurch. *Exp.* 40–44 millim. Type † in Coll. Meyrick.

1702. **Persectania atristriga.**

Xylina atristriga, Wlk. xxxiii. 756 (1865); Hudson, New Zealand Moths & Butterflies, p. 10, pl. iv. f. 12.
Mamestra antipoda, Feld. Reis. Nov. pl. 109. f. 23 (1874).

Head and thorax purplish or red-brown, sometimes brown

irrorated with grey; tegulæ with fuscous and grey medial line; abdomen grey-brown, the anal tuft more ochreous brown. Fore wing grey-brown suffused with purplish red and with slight dark irroration; the costal area greyish to near apex; a prominent black streak below base of cell; the subbasal line represented by slight striæ from costa and cell; the antemedial line arising as double striæ from costa, then indistinct and highly dentate; claviform small, defined by black, sometimes nearly obsolete; orbicular and reniform small, greyish defined by black, the former elongate, the

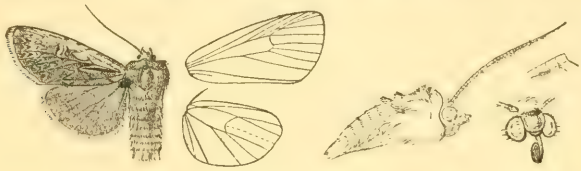


Fig. 103.—*Persectania atristriga*, ♂. ½.

latter angled inwards on median nervure and with some fuscous in lower part; postmedial line arising from double striæ from costa, then indistinct, dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then oblique and strongly angled inwards in submedian fold; subterminal line represented by a series of small ochreous and fuscous dentate marks, slightly angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of black points. Hind wing fuscous brown, with the cilia rufous; the underside pale irrorated with brown, a slight discoidal spot and curved postmedial line.

Hab. New Zealand (*J. J. Walker*), 3 ♂, 1 ♀, Auckland, (*Oxley*) 2 ♂ type, (*Enys*) 1 ♀, Otago (*Hutton*), 1 ♂, Marlborough (*Skellon*), 1 ♂, 1 ♀, (*Mathew*) 1 ♂, Dunedin (*Purdie*), 3 ♂, 1 ♀. *Exp.* 36–44 millim.

Genus **XYLOMANIA**, nov.

Type, *X. hiemalis*.

Proboscis fully developed; palpi porrect to just beyond frons, the 2nd joint fringed with hair below, the 3rd short; frons smooth; eyes large, rounded; tegulæ dorsally produced into a slight ridge; pro- and metathorax with spreading crests; pectus clothed with woolly hair; tibiæ fringed with hair; abdomen with dorsal crest on basal segment. Fore wing with the apex slightly produced, the termen oblique and somewhat angled at vein 3; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 and 6, 7 shortly stalked; 5 obsolescent from middle of discocellulars; 8 anastomosing with the cell near base.

Sect. I. Antennæ of male bipectinate, with rather long branches, the apex simple.

A. Fore wing with the orbicular and reniform confluent ... *behrensiana*.
B. Fore wing with the orbicular and reniform separate.
  a. Fore wing without black streak below base of cell..... *erythrolita*.
  b. Fore wing with black streak below base of cell ... . *hiemalis*.

703. Xylomania behrensiana. (Plate LXXXIX. fig. 10.)

Graphiphora behrensiana, Grote, Can. Ent. vii. p. 71 (1875); Smith, Cat. Noct. N. Am. p. 208.

♀. Head and thorax dull brown mixed with grey; abdomen brownish white irrorated with dark brown. Fore wing brownish grey, suffused with brown to the subterminal line and thickly irrorated and striated with black-brown; the costal edge pale; subbasal line blackish, defined by pale colour on outer side, waved, from costa to submedian fold; antemedial line defined by whitish on inner side, oblique from costa to above inner margin, then angled inwards; orbicular and reniform defined by whitish, confluent and forming a celt-shaped mark; postmedial line double filled in with whitish, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4; the veins of terminal half streaked with whitish; subterminal line whitish, excurved below costa and at middle; a terminal series of black points. Hind wing pinkish white with slight dark irroration, especially on marginal areas; the underside with small black discoidal spot, curved postmedial series of points on the veins and terminal series.

Hab. U.S.A., California, 1 ♀ type. *Exp.* 40 millim.

1704. Xylomania erythrolita. (Plate LXXXIX. fig. 11.)

Graphiphora erythrolita, Grote, Can. Ent. xi. p. 208 (1879); Smith, Cat. Noct. N. Am. p. 208.

Head and thorax purplish grey mixed with dark brown; shaft of antennæ crimson in male; palpi tinged with crimson; tarsi with pale rings; abdomen grey mixed with fuscous. Fore wing purplish grey irrorated with dark brown, especially on basal half; subbasal and antemedial lines represented by slight dark spots on costa; orbicular and reniform dark with greyish annuli, the former small, round, the latter obliquely curved; traces of an oblique medial line from cell to inner margin; postmedial line indistinct, produced to points on the veins, bent outwards below costa, incurved at discal fold and below vein 4; subterminal line indistinct, interrupted, whitish defined by brown on inner side, prominently towards costa and inner margin, angled outwards at vein 7 and excurved at middle; a terminal series of brown striæ. Hind wing grey suffused with brown, especially on terminal area; the underside grey irrorated with brown, a dark discoidal spot and curved postmedial series of points on the veins.

Ab. 1 Much more rufous in colour.

Hab. U.S.A., California, 5 ♂, 1 ♀, type. *Exp.* 34 millim.

1705. Xylomania hiemalis.

Xylomiges hiemalis, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 71 (1874); Smith, Cat. Noct. N. Am. p. 233.

Dryobota californica, Behr. Streck. Lep. Rhop. & Het. p. 94 (1874).

Head and thorax grey mixed with brown and black; frons with

black bar; tegulæ with black medial line; tarsi ringed with black; abdomen pale reddish, ventrally mixed with grey. Fore wing bluish grey irrorated with fuscous and black; a waved black streak below base of cell; the subbasal line represented by an oblique black striga from costa; antemedial line oblique, waved; claviform well-developed, defined by black; orbicular and reniform large, with orange and black scales at centre and grey annuli defined by black, the former irregularly rounded and open above; postmedial line double, indistinct, dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line whitish, defined by dentate black marks on inner side and by the area beyond it being darker, running obliquely from apex, dentate at veins 4, 3, and incurved

Fig. 104.—*Xylomania hiemalis*, ♂. ½.

at discal and submedian folds; a terminal series of small black lunules. Hind wing white, more or less strongly irrorated with fuscous; a terminal series of dark striæ; the underside with black discoidal lunule and sinuous punctiform postmedial line showing through on upperside.

Hab. Canada, Vancouver I. (*W. H. Danby*), 3 ♂, 1 ♀; U.S.A., California, Sanzalito, 1 ♂; Oakland, 1 ♀ type. *Exp.* 34–38 millim.

Sect. II. Antennæ of male with short branches, the apex simple.

A. Fore wing with black streak below base of cell.
  a. Fore wing tinged with bluish, the black markings very prominent ..... *pallidior*.
  b. Fore wing tinged with brownish ..... *peritalis*.
B. Fore wing without black streak below base of cell ..... *cognata*.

*1706. Xylomania pallidior. (Plate LXXXIX. fig. 12.)

Xylomiges pallidior, Smith, J. N.Y. Ent. Soc. vii. p. 227 (1899); Dyar, Cat. Lep. N. Am. p. 158.

♂. Head and thorax bluish white mixed with some black, palpi black at sides; frons with black bar; tegulæ with black medial line; patagia with black streak on lower edge and some black scales near upper edge; tarsi with black rings; pectus tinged with pink; abdomen whitish tinged with purplish pink and irrorated with black. Fore wing bluish white irrorated with fuscous, the base of inner margin tinged with pinkish; a sinuous black line below base of cell connected with the claviform, which is defined by

black; subbasal line represented by two striæ from costa; antemedial line double, waved, oblique, intersected by an oblique black streak in cell running to upper edge of orbicular, which is defined by black, oblique elliptical, open above and confluent below with the reniform, which is defined by black, has blackish centre and has its lower part intersected by a black streak; a diffused black medial shade, oblique from costa to median nervure; postmedial line indistinctly double, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line represented by a series of wedge-shaped black spots produced as streaks to termen towards costa and inner margin; cilia chequered black and white. Hind wing white irrorated with blackish, and the costal and inner areas tinged with pinkish brown; a discoidal lunule, postmedial series of short streaks on the veins, and series of marks on termen and cilia, all more distinct on underside.

Hab. Canada, Br. Columbia, in U.S. Nat. Mus. *Exp.* 42 millim.

1707. Xylomania peritalis. (Plate LXXXIX. fig. 13.)

Xylomiges peritalis, Smith, Proc. U.S. Nat. Mus. xv. p. 69 (1892); id. Cat. Noct. N. Am. p. 233.

♂. Grey mixed with vinous brown; palpi blackish; tegulæ with black medial line; patagia edged with black; tarsi banded with black; abdomen pale rufous. Fore wing white irrorated with fuscous and slightly tinged with pale vinous at base; a black streak below base of cell; subbasal and antemedial lines represented by dark strigæ on costa; claviform very large, defined by black; orbicular and reniform very large, almost confluent, defined by black, the former produced at lower extremity, the latter somewhat constricted at middle; traces of a medial shade towards costa and inner margin; postmedial line represented by two striæ on costa and one on inner margin; subterminal line only defined by some black streaks before its medial part and in the interspaces beyond it, angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia chequered white and black. Hind wing white, the inner area tinged with pale rufous; a black terminal line; the underside with large black discoidal lunule and postmedial series of black striæ showing through to upperside.

Hab. U.S.A., Oregon, Colorado, Glenwood Springs (*Barnes*), 1 ♂. *Exp.* 40 millim.

1708. Xylomania cognata.

Xylomiges cognata, Smith, Trans. Am. Ent. Soc. xxi. p. 78, pl. v. f. 3 (1894); Dyar, Cat. Lep. N. Am. p. 158.

Head and thorax white mixed with black; tegulæ with black medial line; tarsi banded with black; abdomen pale rufous. Fore wing white, irrorated with pale brown and fuscous and sometimes tinged in parts with ochreous; a double, waved, black subbasal line from costa to submedian fold; a double, oblique, waved antemedial

line, angled inwards on vein 1; claviform well-developed, short, defined by black; orbicular and reniform large, rounded, sometimes almost confluent, incompletely defined by black; traces of a waved medial line; postmedial line indistinct, dentate, bent outwards below

Fig. 105.—*Xylomania cognata*, ♂. ½.

costa, excurved to vein 4, then strongly incurved; subterminal line white, defined on each side by black marks except towards costa, angled outwards at vein 7 and dentate at veins 4 and 3, then incurved, the area beyond it rather darker; a terminal series of small black lunules; cilia chequered white and black. Hind wing white slightly irrorated with black; a terminal black line; the underside with discoidal spot and postmedial punctiform line showing through to upperside.

Hab. Canada, Vancouver I. (*W. H. Danby*), 4 ♂, 3 ♀; U.S.A., Oregon, Colorado. *Exp.* 38 millim.

Sect. III. Antennæ of male serrate and fasciculate.

A. Fore wing with black streak below base of cell.
  a. Fore wing with the ground-colour brownish grey ..... *rubrica.*
  b. Fore wing with the ground-colour white ..... *simplex.*
B. Fore wing without black streak below base of cell.
  a. Fore wing not suffused with red-brown.
    a^1. Fore wing not suffused with black.
      a^2. Fore wing with the indistinct subterminal line strongly angled inwards on vein 4 ..... *indurata.*
      b^2. Fore wing with the indistinct subterminal line not angled inwards on vein 4 ..... *curialis.*
    b^1. Fore wing largely suffused with black.
      a^2. Fore wing with the ground-colour blue-grey ..... *candida.*
      b^2. Fore wing with the ground-colour whitish ..... *dolosa.*
  b. Fore wing strongly suffused with red-brown ..... *perlubens.*

1709. Xylomania rubrica. (Plate LXXXIX. fig. 14.)

Graphiphora rubrica, Harv. Can. Ent. x. p. 58 (1878); Smith, Cat. Noct. N. Am. p. 234.

♀. Head, thorax, and abdomen brownish grey; frons with black bar; tegulæ with blackish medial line; patagia with some black scales on edges; abdomen with dark irroration; tarsi banded with black. Fore wing brownish grey, suffused with rufous from orbicular above vein 2 to subterminal line, sometimes with a distinct curved black shade on lower part of this area; an irregular black streak below base of cell; subbasal line double, waved, from costa to sub-

median fold; antemedial line double, waved, nearly erect; claviform slightly defined by black; orbicular and reniform defined by black, the former oblique elliptical, open above, grey or rufous with grey annulus, the latter rufous with grey annulus; postmedial line double, minutely waved, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, some white points beyond it on costa; subterminal line whitish, sometimes finely defined by black on inner side, the area beyond it dark except at apex, where there is a grey patch, angled outwards at vein 7, then nearly straight; a terminal series of black lunules; cilia grey mixed with dark brown. Hind wing white, some brown irroration on the veins and inner area; a terminal lunulate black line; the underside with brown irroration on costal area, a black discoidal lunule showing through to upperside, and a postmedial series of short streaks on the veins.

Hab. U.S.A., Oregon, California, San Raphael, 1 ♀ type, Havilah, 1 ♀. *Exp.* 38 millim.

1710. Xylomania simplex.

Acronycta simplex, Wlk. xxxii. 618 (1865); Smith, Cat. Noct. N. Am. p. 233.
Xylomiges crucialis, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 277 (1875).

Head and thorax white mixed with grey; frons with black bar; tegulæ with black medial line; patagia edged with black; tarsi ringed with black; abdomen grey tinged with rufous. Fore wing white thickly irrorated with fuscous; a strong black streak below base of cell; the subbasal line represented by an oblique black striga from costa, the antemedial line by striæ from costa and inner

Fig. 106.—*Xylomania simplex*, ♂. ½.

margin; claviform large, more or less completely defined by black; orbicular large, oblique, wedge-shaped, open above, defined by a black patch or streak before it in cell, and the oblique medial black shade beyond it from costa to median nervure; reniform large, rounded, with some orange at centre, an incomplete black outline and a prominent semicircular black mark below it; postmedial line represented by a series of black striæ on the veins, bent outwards below costa, excurved to vein 4, then strongly incurved, subterminal line only defined by a series of short black streaks in the interspaces beyond it, angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia intersected with black. Hind wing white, with series of black striæ on termen; the

underside with black discoidal spot and postmedial series of striæ showing through to upperside.

Hab. Canada, Vancouver I. (*Dr. Lyall, W. H. Danby*), 2 ♂ type; U.S.A., Washington, 1 ♀, Oregon, Portland, Colorado, California, Sanzalito, 2 ♂, 1 ♀, type *crucialis*. *Exp.* 36–44 millim.

Larva. Head very slightly bilobed, shining brown, the sutures and mottling on the sides lighter. Body green or brown, finely dotted with white; dorsal, lateral, and suprastigmatal lines fine, white, straight. Shields very slightly chitinized, lighter than the body, pale, unmarked. Spiracles black, surrounded by reddish. Food-plants, various shrubs.—H. G. D.

1711. Xylomania indurata. (Plate LXXXIX. fig. 15.)

Xylomiges indurata, Smith, Trans. Am. Ent. Soc. xxi. p. 80, pl. iv. f. 7 (1894); Dyar, Cat. Lep. N. Am. p. 158.

♂. Head and thorax clothed with dark brown and grey scales; abdomen grey dorsally tinged with ochreous, ventrally irrorated with brown. Fore wing bluish grey strongly irrorated with fuscous; the ante- and postmedial lines represented by traces of dark points on the veins; claviform rather large, obscurely defined by brown; orbicular and reniform obscurely defined by brown, the former rounded; the subterminal line only defined by an indistinct series of small dentate dark marks on its inner side; an indistinct oblique dark shade from termen below apex; cilia intersected with whitish. Hind wing white sparsely irrorated with brown, especially on the veins, the inner margin tinged with pale reddish brown; the underside with black discoidal lunule and postmedial series of short streaks on the veins showing through to upperside.

Hab. U.S.A., Colorado, Glenwood Springs (*Barnes, Oslar*), 2 ♂, 3 ♀; Durango (*Oslar*), 1 ♂. *Exp.* 46 millim.

1712. Xylomania curialis. (Plate LXXXIX. fig. 16.)

Xylomiges curialis, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 143 (1873); Smith, Cat. Noct. N. Am. p. 233.

Head and thorax clothed with bluish-grey and brown scales; tarsi banded with black; abdomen white, dorsally tinged with ochreous, ventrally irrorated with brown. Fore wing bluish grey irrorated and suffused with fuscous brown, the submedian and discal folds often with a reddish tinge; the veins slightly streaked with black, the subbasal line represented by an indistinct dark striga from costa; the antemedial line very indistinct, waved; claviform rather large, defined by blackish; orbicular and reniform obscurely defined by blackish, the former round, the latter with some black in its lower part and often some red on its outer edge; postmedial line very indistinct, dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then oblique; the subterminal line grey, defined by small dentate dark marks on its inner side, angled outwards at vein 7 and slightly excurved at middle; traces of a terminal series of dark points.

Hind wing pure white, with terminal series of small black lunules; the underside with the costal area slightly irrorated with brown, a dark discoidal spot and some postmedial striæ on the veins.

Hab. U.S.A., California, 2 ♂ type; San Francisco (*Stretch*), 1 ♂, 1 ♀. *Exp.* 40 millim.

1713. **Xylomania candida.** (Plate LXXXIX. fig. 17.)

Xylomiges candida, Smith, Trans. Am. Ent. Soc. xxi. p. 79, pl. v. f. 1 (1894); Dyar, Cat. Lep. N. Am. p. 158.

Head and thorax clothed with bluish-white and black scales; tegulæ with slight black medial line; tarsi banded with black: abdomen tinged with pale rufous, the ventral surface white irrorated with black. Fore wing bluish white thickly irrorated and suffused with black; a dentate black subbasal line from costa to submedian fold; a waved antemedial line angled inwards on vein 1 and outwards above inner margin; claviform rather small, obscurely defined by black; orbicular and reniform with fuscous centres and whitish annuli defined by black, the former irregularly rounded, the latter usually with a reddish mark on its outer edge; a waved blackish medial shade angled at median nervure; postmedial line dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then strongly incurved; subterminal line grey defined by small blackish, somewhat dentate marks on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of dark points. Hind wing pure white; the underside with small discoidal lunule, postmedial series of short streaks on the veins, and terminal series of striæ showing through to upperside, the costal area irrorated with brown.

Hab. Canada, Vancouver I. (*W. H. Danby*), 7 ♂, 2 ♀; U.S.A., Oregon, Corvallis, 1 ♀. *Exp.* 40 millim.

1714. **Xylomania dolosa.** (Plate LXXXIX. fig. 18.)

Xylomiges dolosa, Grote, Can. Ent. xii. p. 88 (1880); Smith, Cat. Noct. N. Am. p. 234.

♀. Head, thorax, and abdomen clothed with black and white scales; pectus paler; tarsi ringed with black. Fore wing white thickly irrorated with black, and suffused with black from base to postmedial line except the inner area, at costa extending to subterminal line; subbasal line waved, black, obscurely defined by white, from costa to submedian fold; antemedial line represented by a black striga from costa and an angle above inner margin; claviform a prominent wedge-shaped white mark confluent with the small round orbicular, which has a fuscous centre; reniform well developed, white, its centre irrorated with black; postmedial line rather indistinct, dentate and produced to points on the veins, bent outwards below costa, excurved to vein 4, then strongly incurved; subterminal line white, defined on inner side by a confluent series of dentate black marks angled outwards at vein 7 and incurved at

submedian fold, the veins beyond it streaked with black; a terminal series of small black lunules. Hind wing white sparsely irrorated with black, a terminal blackish line, the underside with large black discoidal lunule.

Hab. U.S.A., Maine, 1 ♀ type, New Hampshire, White Mts., New York, Plattsburgh, Colorado. *Exp.* 42 millim.

1715. Xylomania perlubens. (Plate LXXXIX. fig. 19.)

Xylomiges perlubens, Grote, Can. Ent. xiii. p. 132 (1881); Smith, Cat. Noct. N. Am. p. 234.
Mamestra subapicalis, Smith, Proc. U.S. Nat. Mus. x. p. 462 (1887).

♂. Head and thorax ferruginous red slightly mixed with grey; frons with blackish bar; tegulæ with slight medial black line; patagia with some black scales near edges; dorsal crests tipped with black; tarsi banded with black; abdomen pale ferruginous mixed with grey. Fore wing grey, almost entirely suffused with ferruginous red and irrorated with white, the veins streaked with black and white; a double, waved, black subbasal line from costa to submedian fold; a double antemedial line, oblique from costa to submedian fold, angled inwards above vein 1 and outwards above inner margin; claviform moderate, defined by black; orbicular and reniform defined by black, large, the former erect elliptical, with whitish centre, the latter rufous with some black on lower part, open above and on outer side; traces of a waved medial shade; postmedial line double, waved, bent outwards below costa, slightly incurved at discal fold and strongly below vein 4, some white points beyond it on costa; subterminal line pale, defined by rufous and some black on inner side, the area beyond it fuscous irrorated with white and with grey apical patch, angled outwards at vein 7 and slightly excurved at middle; a terminal series of small black lunules; cilia fuscous and pale rufous. Hind wing white with some terminal black striæ; the underside with the costal area irrorated with brown, a black discoidal spot and postmedial series of short streaks on the veins.

Hab. U.S.A., Washington, 1 ♂ type, Oregon, Portland, Colorado, California. *Exp.* 46 millim.

Larva. Dyar, Can. Ent. xxvi. p. 67 (1894).

Head whitish, with brown reticulations and streaks on the sides; tubercles black. Body pale brown or partly greenish, brown-dotted. Dorsal line narrow, white, black-edged, subdorsal line similar; lateral area black-shaded; stigmatal band broad, dull-red filled, bordered with white. Food-plant, Wild Gooseberry.—H. G. D.

Sect. IV. Antennæ of male ciliated.

A. Fore wing with the reniform not angled inwards on median nervure and confluent with the orbicular.
  a. Fore wing with black streak below base of cell.
    *a*¹. Fore wing with the postmedial line almost obsolete . *conspicillaris.*
    *b*¹. Fore wing with the postmedial line well developed... *pulchella.*

b. Fore wing without black streak below base of cell.
*a*¹. Fore wing with the ante- and postmedial lines conjoined by a black streak in submedian fold..... *bella*.
*b*¹. Fore wing with the ante- and postmedial lines not conjoined by a black streak ..... *alternans*.
B. Fore wing with the reniform angled inwards on median nervure and confluent with orbicular.
a. Fore wing bluish white ..... *patalis*.
b. Fore wing greyish white suffused in parts with brown... *norma*.
c. Fore wing ochreous whitish.
*a*¹. Fore wing with brown patch on termen above tornus. *natalensis*.
*b*¹. Fore wing without brown patch on termen above tornus ..... *v-album*.

1716. Xylomania conspicillaris.

Noctua conspicillaris, Linn. Syst. Nat. x. p. 515 (1758); Esp. Schmett. iv. pl. 134. ff. 4–6; Hübn. Samml. Eur. Schmett., Noct. ff. 236, 237; Steph. Ill. Brit. Ent., Haust. ii. p. 169; Dup. Lép. Fr. vii. p. 149, pl. 110. ff. 3, 4; Staud. Cat. Lep. pal. p. 212.
Noctua musicalis, Esp. Schmett. iv. pl. 147. f. 5 (1777).
Noctua melaleuca, View. Tab. Verz. p. 68, pl. i. f. 5 (1789); Dup. Lép. Fr. vii. pl. 112. f. 6.

Head and thorax bluish grey mixed with dark brown; frons with black bar; tegulæ with black medial line; thoracic crests black; tibiæ black with pale rings; abdomen grey irrorated with brown. Fore wing bluish grey irrorated with brown, the basal and costal areas suffused with reddish brown; the veins streaked with black; a black streak below base of cell; subbasal line represented by an oblique black striga from costa; antemedial line indistinct, strongly dentate; claviform defined by black; orbicular and reniform large, rounded, incompletely defined by black, the latter with

Fig. 107.—*Xylomania conspicillaris*, ♂. ½.

black mark in its lower part; an oblique brown line from lower angle of cell to inner margin; postmedial line represented by a double series of black points on the veins, bent outwards below costa, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line only defined by the area beyond it being suffused with rufous, running obliquely from apex and dentate on veins 3, 4, 2, 1; cilia red-brown intersected with white. Hind wing white; the veins brown, the apex tinged with brown; a terminal series of brown striæ; the underside with the costal area irrorated with brown, a black discoidal spot and postmedial series of striæ on the veins.

Ab. 1. *melaleuca*. Fore wing black except inner area, which is grey or ochreous white.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Austria, Leech Coll.; Italy, North and Central; Sweden; Russia, Livonia, Zeller Coll.; Armenia; Asia Minor, Pontus, Taurus; Kurdistan; W. Turkestan, Sarawschan; W. Siberia, Altai. *Exp.* 35–42 millim.

Larva. Meyr. Brit. Lep. p. 83; Barrett, Lep. Brit. iv. p. 143, pl. 152. f. 3.

Greenish ochreous freckled with fuscous, forming darker dorsal blotches; dorsal and subdorsal lines obscurely dark-edged; spiracular line pale reddish ochreous with dark edge above; head pale pinkish ochreous with black markings. Food-plants: *Lotus*, *Polygonum*, etc. 6–8.

1717. Xylomania pulchella. (Plate LXXXIX. fig. 20.)

Xylomiges pulchella, Smith, Trans. Am. Ent. Soc. xxi. p. 81, pl. v. f. 2 (1894); Dyar, Cat. Lep. N. Am. p. 158.

Head and thorax brownish grey; frons with blackish bar; tegulæ with traces of black medial line and sometimes black tips; patagia incompletely edged with black; abdomen pale brown irrorated with fuscous. Fore wing white, sparsely irrorated with black; the antemedial, postmedial, and terminal areas except at apex suffused with black; a black streak below base of cell; a double, waved subbasal line from costa to submedian fold; a double, waved antemedial line; claviform moderate, defined by black, or almost obsolete; orbicular and reniform defined by black, the former pure white, oblique elliptical, the latter with whitish annulus suffused with rufous, extending to postmedial line and with some black in its lower part; traces of a waved medial line; postmedial line waved, defined by grey on outer side, bent outwards below costa, slightly incurved at discal fold and strongly below vein 4, some white points beyond it on costa; subterminal line white, angled outwards at vein 7 and slightly incurved at submedian fold; an apical grey patch; a terminal series of small black lunules; cilia fuscous intersected with white. Hind wing white, with some dark irroration on veins and inner and terminal areas; the underside with the costal area irrorated with black, a black discoidal spot and minutely waved postmedial line.

Hab. Canada, Vancouver I. (*W. H. Danby*), 6 ♂, 2 ♀. *Exp.* 40 millim.

1718. Xylomania bella. (Plate LXXXIX. fig. 21.)

Xylomyges bella, Butl. Trans. Ent. Soc. 1881, p. 175,

Head and thorax ochreous; frons with black bar; tegulæ whitish at base, with black medial line and rufous tips; tarsi banded with black; abdomen ochreous. Fore wing white irrorated with ochreous and dark brown; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line oblique, from costa to submedian fold, angled inwards on vein 1 and outwards above inner margin; the medial area except below submedian fold suffused with dark brown, becoming black towards

submedian fold; claviform moderate, defined by black; orbicular and reniform large, pale rufous with whitish annuli defined by black, the former oblique elliptical, open above, the latter open on outer side; postmedial line dentate, defined by white on outer side, bent outwards below costa, excurved to vein 4, then oblique, some bluish grey beyond it towards inner margin; subterminal line white, arising from the white apical patch, slightly excurved at middle and with small black spots on it above veins 4 and 3; the veins beyond the lower angle of cell streaked with black; the terminal area red-brown except at apex: a terminal series of black and white lunules; cilia brown intersected with white. Hind wing white, with postmedial series of black points on the veins; the terminal area suffused with brown from apex to vein 2; some terminal black lunules; the underside with the costal area irrorated with brown, a black discoidal spot.

Hab. Japan, Yokohama (*Pryer*), 4 ♂, 5 ♀, type. *Exp.*, ♂ 42, ♀ 46 millim.

1719. **Xylomania alternans.** (Plate LXXXIX. fig. 22.)

Hapalia alternans, Wlk. x. 360 (1856).
Xylomiges tabulata, Grote, Bull. U.S. Geol. Geog. Surv. Terr. iv. p. 181 (1878); Smith, Cat. Noct. N. Am. p. 234.

♀. Head and thorax dark grey mixed with black and white; frons with black bar; tegulæ with black medial line; tarsi banded with black; abdomen ochreous banded with black. Fore wing dark grey; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, oblique; claviform with its extremity defined by black; orbicular and reniform large, defined by black, the former with whitish annulus, rather quadrate and open above and below; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line defined on inner side by white suffusion except at costa, and with blackish marks on it at discal and submedian folds; the veins of terminal area slightly streaked with black; a terminal series of small black lunules. Hind wing whitish uniformly suffused with reddish brown; cilia whitish; the underside white irrorated with brown, a black discoidal spot and sinuous postmedial line with short black streaks on the veins, some terminal black striæ.

Hab. U.S.A., 1 ♂, 1 ♀ type, New York, 1 ♀, Grote Coll. *Exp.* 40 millim.

1720. **Xylomania patalis.** (Plate LXXXIX. fig. 23.)

Xylomiges patalis, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 144, pl. iv. f. 11 (1873); Smith, Cat. Noct. N. Am. p. 234.
Xylomiges fletcheri, Grote, Can. Ent. xx. p. 130 (1888).

Head and thorax bluish white mixed with fuscous brown; frons with black bar; tegulæ with black medial line; patagia edged with black; abdomen grey mixed with brown. Fore wing bluish

whitish irrorated with pale fuscous brown; a fine black streak below base of cell; an oblique black striga across cell before the antemedial line, which is represented by a fuscous striga from costa and an angle above inner margin; claviform moderate, defined by black; orbicular and reniform defined by black, the former oblique elliptical, the latter angled inwards on median nervure and confluent or nearly confluent with the former; postmedial line indistinct or almost obsolete, minutely waved, bent outwards below costa, incurved at discal fold and strongly below vein 4; subterminal line only defined by some small dentate black marks on its inner side and some fuscous suffusion on costa, angled outwards at vein 7 and slightly excurved at middle; a terminal series of black points. Hind wing white, the veins and marginal areas suffused with reddish brown in male, wholly suffused in female; the underside irrorated with brown, a dark discoidal spot and sinuous postmedial line.

Hab. Canada, Vancouver; U.S.A., California (*Walsingham*), 1 ♂, 1 ♀, Sanzalito, 3 ♂, 1 ♀ type. *Exp.* 39 millim.

1721. Xylomania norma. (Plate LXXXIX. fig. 24.)

Dianthœcia norma, Saalm. Lép. Madag. p. 305, t. 245 (1891).

♂. Head and thorax ochreous, tinged with rufous and mixed with some black; tegulæ with black line near upper edge; abdomen ochreous, tinged with rufous and irrorated with black. Fore wing greyish white, suffused in parts with rufous and irrorated with fuscous; a rather wedge-shaped black mark below base of cell with short streak beyond it; subbasal line represented by a black point on costa; antemedial line waved, angled at submedian fold; claviform small, whitish tinged with red and defined by black; orbicular and reniform whitish tinged with red and incompletely defined by black, the former very elongate elliptical and running into lower angle of cell, with a blackish spot in upper extremity, the latter narrow, its upper extremity produced and its lower retracted into a streak on median nervure running below the orbicular; postmedial line highly dentate, bent outwards below costa, excurved to vein 4, then oblique; a slight dark triangular shade on costa towards apex; the terminal area dark, arising from termen just below apex and interrupted by a dentate whitish mark on vein 4, some short black streaks on its inner edge and some black points on termen; cilia pale rufous intersected with yellow. Hind wing fuscous brown; cilia whitish tinged with rufous; the underside whitish irrorated with black, a discoidal lunule, sinuous postmedial line, and terminal series of small spots.

Hab. Madagascar, Betsileo (*Cowan*), 1 ♂. *Exp.* 22 millim.

1722. Xylomania natalensis. (Plate LXXXIX. fig. 25.)

Apamea natalensis, Butl. A. M. N. H. (4) xvi. p. 403 (1875).

♀. Head and thorax brownish white, slightly mixed with

rufous; tegulæ with three dark lines; patagia edged with brown below and black scales above; tarsi banded with black; abdomen ochreous tinged with fuscous, the dorsal crest at base blackish. Fore wing very pale olive-brown, sparsely irrorated with black; subbasal line represented by black striæ from costa and cell; a short black streak above base of vein 1; antemedial line indistinct, double, waved; median nervure and medial part of vein 1 streaked with white and with black points on them; orbicular and reniform small and rather ill-defined, situated on a rufous patch in and below cell, the former white, sometimes with fuscous centre, oblique and confluent at lower angle of cell with the latter, which is rufous with a black point in lower angle of cell and black patch beyond it; postmedial line represented by an incomplete double series of black points, bent outwards below costa, excurved to vein 4, then oblique; subterminal line only defined by the area beyond it being dark brown, bent outwards to apex and dentate at veins 4, 3; a terminal series of small black lunules; cilia chequered pale black and rufous. Hind wing fuscous brown, the interspaces rather paler towards base; cilia ochreous with brown line and pale tips; the underside ochreous irrorated with black, the costal and terminal areas tinged with vinous red, a black discoidal lunule and curved postmedial line.

Hab. Natal (*Burrows*), 1 ♀ type, Durban (*Leigh*), 2 ♀. *Exp.* 32 millim.

1723. Xylomania v-album. (Plate LXXXIX. fig. 26.)

Leucania v-album, Hmpsn. Ill. Het. B. M. viii. p. 69, pl. 144. f. 10 (1891); id. Moths Ind. ii. p. 273.

Head and thorax ochreous mixed with reddish brown; tegulæ with black line near upper edge; abdomen ochreous suffused with dark brown on dorsum. Fore wing ochreous whitish irrorated and striated with fuscous, less prominently on terminal area; an ill-defined black streak below base of cell; subbasal line represented by a black point on costa; some ferruginous sometimes present in and below cell; the orbicular and reniform whitish, narrow, oblique, confluent below, and forming a V-shaped mark with blackish suffusion before, between its arms and beyond it, a black point on it at lower angle of cell; some black striæ on costa from before middle to near apex; traces of an antemedial line angled on median nervure, then reduced to points; postmedial line ill-defined, angled at vein 4, then oblique; a rather indistinct triangular brown shade from termen below apex; a terminal series of small black lunules; cilia brown intersected with white. Hind wing fuscous brown; cilia whitish; the underside ochreous white thickly irrorated and striated with black-brown, the terminal area almost entirely black-brown, a large discoidal spot.

Hab. Madras, Nilgiris (*Cardew, Hampson*), 1 ♂, 2 ♀, type. *Exp.* 30 millim.

Genus PERIGRAPHA.

	Type.
Perigrapha, Led. Noct. Eur. p. 136 (1857)	*I-cincta.*
Acerra, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 162 (1874)	*normalis.*

Proboscis fully developed; palpi oblique, the 2nd joint fringed with long hair in front, the 3rd moderate, porrect; frons smooth; eyes large, round, clothed with very long hair; antennæ typically bipectinate to apex in both sexes, the branches shorter in female; head and thorax clothed with hair only; the tegulæ produced upwards into a slight ridge, a ridge-like dorsal crest; pectus and legs clothed with long hair; abdomen clothed with rough hair, the 1st segment with dorsal crest. Fore wing with the apex somewhat produced, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from angle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base.

Sect. I. Antennæ bipectinate in both sexes.

A. Fore wing with the orbicular and reniform conjoined by a pale patch below cell.	
a. Tegulæ with white tips	*circumducta.*
b. Tegulæ without white tips	*I-cincta.*
B. Fore wing with the orbicular and reniform not conjoined by a pale patch below cell	*prima.*

1724. Perigrapha circumducta. (Plate LXXXIX. fig. 30.)

Orthosia circumducta, Led. Verh. z.-b. Ges. Wien, 1855, i. p. 111, pl. i. f. 9; Staud. Cat. Lep. pal. p. 200.

♂. Head and thorax chocolate-brown mixed with grey; frons with whitish bar above; antennæ whitish; tegulæ edged with white; abdomen rufous mixed with grey. Fore wing with the basal and terminal areas pale pinkish brown with slight dark irroration; the medial area chocolate except the costal and inner areas, which are grey irrorated with fuscous; a whitish subbasal line from costa to submedian fold defined by fuscous; a fine pale antemedial line excurved below costa, then running obliquely with an inward curve to above inner margin, where it is angled; orbicular and reniform very large, brownish white defined by white, the former rather oblique oblong, the latter extending to far below cell, angled at middle and truncate at lower extremity, and both conjoined to a large similar semicircular patch below the cell; postmedial line pale, excurved from costa to vein 4, then oblique, defined on outer side by some grey and fuscous irroration; a series of small fuscous spots on termen. Hind wing yellowish suffused with dark brown; the underside pale irrorated with brown, with dark discoidal spot and traces of sinuous postmedial line.

Hab. S. Russia, Sarepta; W. Siberia, Altai; W. Turkestan, Turcomania, 1 ♂, Tarbagatai; E. Turkestan, Ili. *Exp.* 50 millim.

1725. Perigrapha I-cincta.

Noctua I-cinctum, Schiff. Wien. Verz. p. 78 (1776); Esp. Schmett. iv. pl. 192. f. 5; Hübn. Eur. Schmett., Noct. f. 144; Dup. Lép. Fr. vi. p. 190, pl. 85. f. 2.

Bombyx cincta, Fabr. Mant. Ins. ii. p. 155 (1787); Staud. Cat. Lep. pal. p. 200.

Head and thorax grey mixed with dark brown; tegulæ with dark band; abdomen brownish grey mixed with dark brown. Fore wing brownish grey, slightly irrorated and striated with fuscous; antemedial line represented by two dark points on costa and by a fine pale line running obliquely with an inward curved from subcostal nervure to middle of vein 1, where it is angled; orbicular and reniform very large, grey defined by yellowish white except above, the former rounded, the latter extending to well below cell and both conjoined to a streak on median nervure and semicircular mark below the cell, these markings have black between and all round them except above, shading into brown below; postmedial

Fig. 108.—*Perigrapha I-cincta*, ♂. ½.

line marked by two black spots on costa, then by a grey line with darker grey beyond it, bent outwards below costa, then slightly waved, excurved to vein 4, then incurved; subterminal line pale, defined on inner side by a fine brown line with a paler area before it and by dark patches at costa and inner margin, excurved below costa and angled outwards at veins 4 and 3, the area beyond it browner; a terminal series of dark points. Hind wing fuscous brown; the underside grey irrorated with dark brown, a dark discoidal spot and sinuous postmedial line.

Hab. Austria, Moravia; Hungary, Zeller, Frey, and Leech Colls.; Russia, Urals; W. Siberia, Altai. *Exp.* 46 millim.

Larva. Hübn. Eur. Raup. iv. Noct. ii. Gen. H, *a*, *b*, ff, *b*, *c*.

Pinkish, with dorsal, subdorsal, and lateral yellow lines, the last with some orange below it; ventral surface yellow; head red. Food-plant, *Rumex*.

*1726. Perigrapha prima.

Perigrapha prima, Smith, Trans. Am. Ent. Soc. xviii. p. 119 (1891); Smith, Cat. Noct. N. Am. p. 209.

♀. Deep bluish grey irrorated with fuscous; frons and base of tegulæ yellowish; patagia with obscure black edges. Fore wing with the subbasal line hardly traceable, the costal half of basal

area paler; antemedial line double, evenly oblique, fuscous; claviform absent; orbicular and reniform large, pale grey defined by fuscous, the former elliptical, touching below the latter, which is tinged with red; an indistinct medial shade; postmedial line double, fuscous, interrupted, indistinct, excurved beyond cell, the medial part of postmedial area much paler; subterminal line represented by some black irroration; a series of blackish terminal lunules. Hind wing fuscous; the underside fuscous brown with some pale irroration, a discoidal spot and postmedial line.

Hab. U.S.A., California, Sierra Nevada. *Exp.* 30 millim. This species is unknown to me.

Sect. II. (*Acerra*). Antennæ of male bipectinate, the apex serrate; of female minutely serrate.

A. Fore wing with the orbicular and reniform confluent ..... *normalis.*
B. Fore wing with the orbicular and reniform not confluent.
  a. Fore wing with the orbicular present ..... *pulchella.*
  b. Fore wing with the orbicular absent.
    a^1. Fore wing with the postmedial area darker than ground-colour ..... *terminata.*
    b^1. Fore wing with the postmedial area concolorous ..... *pectinata.*

1727. Perigrapha normalis.

Acerra normalis, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 162 (1894); id Check List Noct. pl. f. 4; Smith, Cat. Noct. N. Am. p. 207.

Head and thorax clothed with hair only, purplish brown mixed with grey; sides of palpi and frons dark brown; tegulæ with brown line at tips; abdomen grey-brown irrorated with dark brown. Fore wing grey suffused with purple-brown and irrorated

Fig. 109.—*Perigrapha normalis*, ♂. ½.

with black; a slightly curved subbasal black line from cell to submedian fold; antemedial line indistinct, very oblique from costa to vein 1 near postmedial line, then angled inwards; orbicular and reniform very large, forming a V with very broad arms and extending to below cell, where it is broadly truncate, defined by whitish lines and by deep black suffusion in middle, at sides and below, open above; postmedial line fuscous, bent outwards below costa, excurved to vein 5, then very obliquely incurved; subterminal line almost obsolete except towards costa, very slightly angled outwards at vein 7 and excurved at middle; a terminal

series of black points. Hind wing fuscous brown; the cilia pinkish; the underside pinkish white thickly irrorated with dark brown, a black discoidal spot and curved postmedial line.

Hab. U.S.A., California, Sanzalito, 1 ♂, 1 ♀, type. *Exp.* 40–44 millim.

*1728. Perigrapha pulchella. (Plate LXXXIX. fig. 31.)

Graphiphora pulchella, Harv. Can. Ent. viii. p. 54 (1876); Smith, Cat. Noct. N. Am. p. 208.

♀. Head and thorax red-brown slightly mixed with grey; metathorax with fuscous crests tipped with grey; pectus with the hair grey; tarsi with pale rings; abdomen pale brown, the dorsal crest at base fuscous and grey. Fore wing grey overlaid with various shades of red and purple-brown, leaving the basal half of costal area and the terminal area grey; an indistinct subbasal line from costa to submedian fold, with a black point beyond it in cell; antemedial line rather ill-defined, oblique from costa to below cell, then erect; orbicular and reniform blackish with pale annuli, rather small, the former irregularly rounded, the latter narrow; an indistinct diffused sinuous medial line; postmedial line slightly defined by grey on outer side and produced to short streaks on the veins, excurved from costa to vein 4, then incurved; subterminal line defined by a dark brown shade before it, angled outwards at veins 7 and 6 and excurved at middle, the area beyond it grey irrorated with brown. Hind wing pale brown; the underside grey tinged with crimson, the costal and terminal areas irrorated with brown, a small discoidal lunule.

Hab. U.S.A., California, in Coll. Schaus. *Exp.* 34 millim.

*1729. Perigrapha terminata.

Tæniocampa terminata, Smith, Pr. U.S. Nat. Mus. x. p. 475 (1887); id. Cat. Noct. N. Am. p. 204.

♂. Dull yellowish grey irrorated with fuscous. Fore wing with the antemedial line indistinct, pale, interrupted; claviform and orbicular absent; reniform represented by a narrow yellow lunule; a diffused dark medial shade; postmedial line indistinct, pale, interrupted, with a series of dark points beyond it on the veins with pale points on their outer sides; postmedial area rather darker than ground-colour; subterminal line irregularly dentate, only defined by the area beyond it being paler; a series of black spots just before termen; a pale waved terminal line. Hind wing blackish, with the cilia whitish; the underside whitish with dark irroration, a discal spot and punctiform postmedial line.

Hab. U.S.A., S. California. *Exp.* 40 millim. This species is unknown to me.

*1730. Perigrapha pectinata. (Plate LXXXIX. fig. 32.)

Tæniocampa pectinata, Smith, Pr. U.S. Nat. Mus. x. p. 475 (1887); id. Cat. Noct. N. Am. p. 204.

♂. Head and thorax ochreous-grey and brown; abdomen rufous irrorated with black, the ventral surface pale. Fore wing brownish grey irrorated with black; subbasal and antemedial lines, claviform and orbicular obsolete; an indistinct medial line oblique from costa to lower angle of cell, then sinuous; reniform represented by a curved reddish-ochreous discoidal bar, concave towards base and defined on inner side by a slight blackish bar arising from costa and joining the medial line at lower angle of cell; a curved postmedial series of black points on the veins; traces of a pale sinuous subterminal line; a series of black points just before termen; a fine whitish line at base of cilia. Hind wing grey-brown with a faint rufous tinge; cilia white tinged with rufous; the underside whitish irrorated with black, a discoidal lunule, sinuous postmedial line with darker streaks at the veins, and some lunules on apical part of termen.

Hab. U.S.A., California, in U.S. Nat. Mus. *Exp.* 40 millim.

Sect. III. Antennæ of male serrate and fasciculate.

A. Fore wing with the inner margin not crimson ..... *præses.*
B. Fore wing with the inner margin crimson ..... *transparens.*

1731. Perigrapha præses.

Perigrapha præses, Grote, Bull. U.S. Geol. Geog. Surv. Terr. v. p. 202 (1879); Smith, Cat. Noct. N. Am. p. 206.

♂. Head purplish, the sides of palpi and frons black; antennæ and tegulæ bright rufous; thorax deep purple-brown, some of the hairs slightly tipped with grey, the metathoracic crest rufous; pectus purplish; tibiæ whitish at extremity; abdomen purplish red irrorated with dark brown, the dorsal crest at base mixed with white. Fore wing dark brown with purplish reflections and

Fig. 110.—*Perigrapha præses*, ♂. ½.

irrorated with a few white scales; traces of a waved rufous subbasal line from costa to submedian fold; antemedial line indistinct, slightly defined by rufous on outer side towards costa, on inner side below cell, oblique from costa to median nervure, then waved;

orbicular and reniform with slight rufous annuli, both rather triangular in form, the latter defined by blackish on inner side; postmedial line indistinct, waved, defined by rufous on outer side, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line rufous, slightly defined by blackish on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing pale, tinged with purplish pink and thickly irrorated with fuscous; traces of a subterminal band towards tornus; the underside with black discoidal spot, sinuous postmedial line, and some terminal lunules.

Hab. U.S.A., California, Sanzalito, 1 ♂ type. *Exp.* 42 millim.

*1732. Perigrapha transparens. (Plate XC. fig. 10.)

Perigrapha transparens, Grote, Bull. U.S. Geol. Geog. Surv. Terr. vi. p. 582 (1881); Smith, Cat. Noct. N. Am. p. 208.
Orthosia hamifera, Grote, Can. Ent. xx. p. 130 (1888); Smith, Cat. Noct. N. Am. p. 218.

♀. Head and thorax crimson mixed with some brown and grey; palpal joints and frons at sides black; antennæ with the basal joint white below; tarsi with pale rings; abdomen dark brown with crimson-tinged lateral fringes, anal tuft, and ventral surface. Fore wing pale rufous thickly irrorated with black and tinged with crimson, especially at base and the fringe on inner margin; subbasal line obsolete; antemedial line very indistinct, oblique, waved; stigmata moderate, with fuscous centres defined by ochreous; the claviform hardly traceable, the orbicular oblique elliptical; traces of a medial shade oblique from costa to median nervure; a curved double postmedial series of black points on the veins; subterminal line only indicated by the area beyond it being very slightly darker, angled outwards at vein 7 and excurved at middle. Hind wing nearly uniform dark brown slightly tinged with crimson, the cilia crimson; the underside pale tinged with crimson and irrorated with blackish, a discoidal lunule.

Hab. U.S.A., Washington, California, in U.S. Nat. Mus. *Exp.* 40 millim.

Sect. IV. Antennæ of male with bristles and cilia.

*1733. Perigrapha ducinfieldi.

Perigrapha ducinfieldi, Schaus, J. N.Y. Ent. Soc. xi. p. 236 (1903).

♂. Head and thorax rufous, the scales slightly tipped with white; palpi at sides and tarsi tinged with fuscous; abdomen pinkish rufous. Fore wing pale pink-brown irrorated with fuscous; a slightly curved subbasal line from costa to submedian fold; a double curved antemedial line; orbicular represented by a dark point; a fuscous medial line oblique from costa to lower angle of

cell; reniform well-developed, rufous, with whitish annulus defined by rufous, its lower part filled in with blackish; postmedial line slight, double, curved, with a series of black points on its outer edge

Fig. 111.—*Perigrapha ducinfieldi*, ♂. ½.

from vein 6 to inner margin; subterminal line represented by a series of small ill-defined rufous spots almost obsolete towards costa; a series of black points just before termen; cilia rufous. Hind wing reddish brown, the cilia rufous; the underside yellowish irrorated with brown, the costal and terminal areas suffused with purplish pink, a black discoidal lunule and sinuous postmedial line.

Hab. Brazil, São Paulo, type † ♂ in Coll. Schaus. *Exp.* 54 millim.

Genus **MONIMA**.

	Type.
Monima, Hübn. Verz. p. 229 (1827)	*miniosa.*
Cuphanoa, Hübn. Verz. p. 229 (1827)	*stabilis.*
Semiophora, Steph. Ill. Brit. Ent., Haust. ii. p. 138 (1839)	*gothica.*
Tæniocampa, Guen. Ann. Soc. Ent. Fr. viii. p. 477 (1839)	*gothica.*
Graphiphora, Hübn. Tent. ined. (nec Ochs.)	*gothica.*

Proboscis fully developed; palpi porrect, the 2nd joint fringed with long hair in front, the 3rd moderate; frons smooth, with corneous plate below it; eyes large, rounded; head and thorax clothed with hair only, the vertex of head and tegulæ with rather ridge-like crest, the pro- and metathorax with loose crests; pectus and legs hairy; abdomen with lateral fringes of hair and without dorsal crests. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only.

Sect. 1. Antennæ of male bipectinate with long branches to near apex, of female with short branches.

A. Fore wing with black fascia in submedian fold from ante- to postmedial line ..... *carnipennis.*

B. Fore wing without black fascia in submedian fold.

a. Fore wing with V-shaped black mark between orbicular and reniform ..... *eriza.*

b. Fore wing without V-shaped black mark between orbicular and reniform ..... *viridis.*

1734. Monima carnipennis.

Tæniocampa carnipennis, Butl. A. M. N. H. (5) i. p. 167 (1878); id. Ill Het. B. M. ii. p. 30, pl. 30. f. 6.

Head and thorax grey tinged with red-brown; palpi black at sides; abdomen ochreous. Fore wing reddish ochreous tinged with grey and slightly irrorated with fuscous; subbasal line represented by a black point below costa and small triangular spot below the cell; antemedial line indistinct, oblique, sinuous; claviform represented by a black bar between ante- and postmedial lines, somewhat attenuate at middle, or by a quadrate patch; orbicular and reniform with slight greyish annuli defined by rufous or sometimes by black and sometimes with some black suffusion between them and beyond the latter, the former round; the postmedial line indistinct, rufous, oblique from costa to vein 6, where it is angled outwards, strongly incurved below vein 4, and usually with a black point on it in discal fold; subterminal line indistinct, pale, defined by rufous on inner side, angled outwards at vein 7, excurved at middle, and bent outwards to tornus; a terminal series of dark points. Hind wing white, the veins and marginal areas tinged with reddish ochreous; the underside with the costal and terminal areas irrorated with brown, a dark discoidal spot and traces of a sinuous postmedial line.

Hab. Japan, Yokohama (*Jonas*, *Pryer*, *Manley*), 6 ♂, 4 ♀. *Exp.* 48 millim.

1735. Monima eriza. (Plate XC. fig. 11.)

Semiophora eriza, Swinh. A. M. N. H. (7) vii. p. 494 (1901).

♀. Head and thorax reddish brown mixed with grey; abdomen grey-brown tinged with ochreous. Fore wing grey-brown with a slight reddish tinge; subbasal, antemedial, and postmedial lines obsolete; orbicular and reniform large, the former oblique quadrate, open above and below, where it almost touches latter, defined on inner side by a black and whitish bar, and the space between the two defined by a black-and-whitish V-shaped mark; the subterminal line defined by a series of small black spots on inner side, angled outwards at vein 7 and incurved at discoidal fold; a terminal series of slight dark points. Hind wing grey-brown; the cilia pale: the underside whitish irrorated with brown, a dark discoidal spot and traces of a sinuous postmedial line.

Hab. Punjab, Kulu, 1 ♀ type. *Exp.* 44 millim.

1736. Monima rorida.

Orthosia rorida, Friv. Tarsas. Evkönyv. ii. p. 272, pl. 7. f. 7 (1835); Herr.-Schäff. Schmett. Eur. ii. p. 206, Noct. f. 48 (1845); Staud. Cat. Lep. pal. p. 201.
Tæniocampa sieversi, Christ. Rom. Mém. ii. p. 58, pl. 3. f. 5 (1885).

Head and thorax grey-white slightly irrorated with fuscous; sides

of palpi and frons black; antennæ pale rufous; abdomen rufous, the ventral surface grey irrorated with fuscous. Fore wing grey-white, rather sparsely irrorated and striated with fuscous; the subbasal line represented by a black point in cell; hardly a trace of the antemedial line except a prominent black striga in cell on inner side of the faint traces of orbicular; reniform a narrow

Fig. 112.—*Monima rorida*, ♂. ½.

blackish lunule expanding somewhat below and with a rufous striga on its inner side; postmedial line represented by a curved series of blackish points on the veins; faint traces of the subterminal line angled outwards at vein 7; a terminal series of black points. Hind wing pale brownish grey irrorated with brown; the underside strongly irrorated, a discoidal lunule and curved postmedial series of short striæ on the veins.

Ab. 1. *sieversi*. Fore wing with the lines more distinct, the area between the medial and postmedial lines tinged with pink.

Hab. Austria, Istria, 1 ♂, 1 ♀, Dalmatia; Bulgaria; S. Turkey; Armenia, Tiflis; Transcaucasia, Geok-tapa, 1 ♂; Asia Minor, Pontus, Bithynia, Lydia, Taurus; Syria, 1 ♀, Leech Coll. *Exp.* 46 millim.

Sect. II. Antennæ of male bipectinate with rather long branches, the apex serrate; of female serrate.

A. Fore wing with blackish or red-brown patch between orbicular and reniform.
  a. Fore wing with dentate black marks before middle of subterminal line.
    *a*¹. Fore wing with the claviform filled in with black . *porosa*.
    *b*¹. Fore wing with the claviform not filled in with black ..... *fasciculata*.
  b. Fore wing without dentate black marks before middle of subterminal line.
    *a*¹. Fore wing with the subterminal line excurved at middle ..... *gothica*.
    *b*¹. Fore wing with the subterminal line oblique, approximated to the postmedial line at middle... *castaneipennis*.
B. Fore wing without black or brown patch between orbicular and reniform.
  a. Fore wing with the orbicular and reniform defined below by blackish streaks ..... *ferrostricta*.

b. Fore wing with the orbicular and reniform not defined below by dark streaks.
*a*¹. Fore wing with more or less prominent small dentate black or brown spots before subterminal line.
*a*². Hind wing suffused with brown.
*a*³. Fore wing with two prominent dentate black spots before middle of subterminal line ..... *munda*.
*b*³. Fore wing without prominent dentate black spots before middle of subterminal line.
*a*⁴. Fore wing with brown shade beyond middle of subterminal line ..... *lizetta*.
*b*⁴. Fore wing without brown shade beyond middle of subterminal line ..... *populeti*.
*b*². Hind wing white ..... *minuosa*.
*b*¹. Fore wing without dentate dark marks before subterminal line.
*a*². Fore wing with the ante- and postmedial lines present.
*a*³. Fore wing with the subterminal line present.
*a*⁴. Fore wing whitish suffused with ferruginous. *ferrigera*.
*b*⁴. Fore wing suffused with red-brown.
*a*⁵. Fore wing with the subterminal line prominent, pale.
*a*⁶. Fore wing with the postmedial area not darker than ground-colour ..... *stabilis*.
*b*⁶. Fore wing with the postmedial area darker than ground-colour ..... *stenoptera*.
*b*⁵. Fore wing with the subterminal line indistinct.
*a*⁶. Fore wing with the ante- and postmedial lines not reduced to series of black points. *rubrescens*.
*b*⁶. Fore wing with the ante- and postmedial lines reduced to series of black points.
*a*⁷. Fore wing with the reniform constricted at middle ..... *cruda*.
*b*⁷. Fore wing with the reniform not constricted at middle.
*a*⁸. Fore wing with the subterminal line slightly defined by brown on inner side ..... *fausta*.
*b*⁸. Fore wing with the subterminal line not defined by brown on inner side. *flaviannula*.
*c*⁴. Fore wing grey-brown ..... *annulimacula*.
*b*³. Fore wing with the subterminal line absent ... *addenda*.
*b*². Fore wing with the ante- and postmedial lines absent.
*a*³. Fore wing fulvous with pale discoidal spot ..... *carminata*.
*b*³. Fore wing purple-red without discoidal spot ... *mys*.

1737. Monima porosa.

Orthosia porosa, Ev. Bull. Mosc. 1854, iii. p. 186; Herr.-Schäff. Neue Schmett. f. 13; Staud. Cat. Lep. pal. p. 201.

Head, thorax, and abdomen dark brown mixed with grey; tarsi black with white rings. Fore wing grey thickly irrorated and in places suffused with dark brown; the subbasal line represented by a black striga from costa and a rather triangular spot below cell; the antemedial line grey defined by black marks on inner side,

oblique and strongly sinuous; claviform large, filled in with black; orbicular and reniform grey with whitish annuli, open above and below, defined by the cell being black before and between them and some black between reniform and postmedial line, the orbicular round; postmedial line grey, defined by black marks on inner side, waved, bent outwards below costa, somewhat angled at vein 4, then oblique, some white points beyond it on costa; subterminal line white, defined by dentate black marks before it below costa and at middle, angled outwards at vein 7 and slightly excurved at middle; cilia chequered brown and grey. Hind wing grey suffused with brown; cilia white at tips; the underside whitish thickly irrorated with brown, the costal and terminal areas suffused with brown, a black discoidal lunule, curved postmedial line, and traces of a subterminal line.

Hab. Russia, Sarepta, 2 ♂, 1 ♀, Urals; W. Turkestan, Kirghistan, Issyk-kul. *Exp.*, ♂ 36, ♀ 40 millim.

*1738. Monima fasciculata. (Plate XC. fig. 12.)

Hadena fasciculata, Hmpsn. Moths Ind. ii. p. 204 (1894).

♀. Head, thorax, and abdomen ferruginous brown; tegulæ tipped with white; tarsi ringed with white. Fore wing ochreous whitish, almost entirely suffused with ferruginous and irrorated and striated with red-brown; subbasal line dark brown, waved, from costa to submedian fold; antemedial line oblique, slightly sinuous; claviform large, defined by black; orbicular and reniform large, whitish defined by black, the former rounded, open above and below, the latter open above and with brown centre with pale striga on it, a red-brown shade between them; an indistinct, oblique, waved medial line from cell to inner margin; postmedial line waved, excurved from costa to vein 4, then incurved, the area beyond it from costa to vein 5 red-brown except for the pale line which defines it; subterminal line ochreous white, nearly straight and slightly diffused, some black marks on inner side below costa and above inner margin and both before and beyond it above and below vein 5; termen whitish with a crenulate black line. Hind wing brown tinged with ferruginous, the termen whitish, the cilia ferruginous; the underside reddish white irrorated with dark brown, a discoidal lunule, sinuous postmedial line, and patch on termen near tornus.

Hab. Sikhim (*Knyvett*), type † ♀ in Coll. Elwes. *Exp.* 54 millim.

1739. Monima gothica.

Noctua gothica, Linn. Syst. Nat. ed. x. p. 516 (1758); Clerck, Icones, pl. i. f. 1; Esp. Schmett. iii. pl. 76. ff. 1, 2; Godt. Lép. Fr. v. p. 80, pl. 61. f. 2; Steph. Ill. Brit. Ent., Haust. ii. p. 138; Staud. Cat. Lep. pal. p. 201.

Noctua nun-atrum, Schiff. Wien. Verz. p. 78 (1776); Hübn. Eur. Schmett., Noct. f. 112.
Orthosia gothicina, Herr.-Schäff. Schmett. Eur. ii. p. 196, Noct. ff. 125, 126 (1845).
Tæniocampa askoldensis, Staud. Rom. Mém. vi. p. 496 (1892).

Head and thorax purplish red-brown mixed with grey; palpi brown at sides; tarsi with pale rings; abdomen pale rufous with some grey below. Fore wing greyish almost entirely suffused with purplish red-brown; subbasal line only represented by black striæ from costa and cell; antemedial line oblique, waved, defined by greyish on inner side; claviform only defined by a black fascia from

Fig. 113.—*Monima gothica*, ♂. ½.

its extremity to postmedial line; orbicular and reniform with whitish annuli, the former oblique elliptical, open above, the cell before and between them and below the orbicular filled in with black; postmedial line defined by grey on outer side, minutely waved, bent outwards below costa, excurved to vein 4, then incurved, some pale points on costa beyond it; subterminal line grey defined by brown on inner side, forming small dentate marks at middle, angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing yellowish suffused with fuscous brown; the cilia paler; the underside whitish irrorated with brown, a discoidal lunule and curved postmedial line.

Ab. 1. *askoldensis*. More violaceous grey.—Amur; Japan.

Ab. 2. *gothicina*. Fore wing with the black markings absent, the cell filled in with olive-brown.—Scotland; Scandinavia; Finland; Tarbagatai Mts.

Hab. Britain, Scotland, Forres (*Salvage*), England (*Doubleday*), N. Wales (*Salvage*); France; Germany, Zeller Coll., Switzerland, Frey Coll.; N. Spain; N. and Centr. Italy, Leech Coll.; Scandinavia; Finland, Zeller and Frey Colls.; Russia, Livonia, St. Petersburg, Zeller Coll., Urals; S.E. Turkey, Leech Coll.; W. Turkestan, Tarbagatai Mts.; W. Siberia, Altai; Amurland, Ussuri; Japan, Gifu (*Pryer*), 2 ♀. *Exp.* 36–40 millim.

Larva. Meyrick, Brit. Lep. p. 75; Barrett, Lep. Brit. v. p. 189, pls. 207 & 208. f. 8.

Light green with numerous pale yellow dots: dorsal and subdorsal lines pale yellowish or whitish; spiracular line very broad, whitish, dark-edged above; head light green. Food-plants: Oak, *Salix*, hawthorn, etc. 5–7.

1740. Monima castaneipennis. (Plate XC. fig. 13.)

Semiophora castaneipennis, Hmpsn. Moths Ind. ii. p. 206 (1894).

♂. Head and thorax bright rufous, the hair slightly tipped with grey; sides of palpi and frons rather darker; tibiæ with dark brown bands; abdomen red-brown, the anal tuft and ventral surface bright rufous. Fore wing bright rufous striated with fuscous; subbasal line fuscous, slightly waved, from costa to submedian fold; antemedial line indistinct, waved, oblique from costa to median nervure, defined by fuscous on inner side; orbicular and reniform moderate, irrorated with fuscous and with pale annuli, the former oblique elliptical, the latter ill-defined on outer side, the cell before and between them deep chestnut; an oblique shade of fuscous striation from cell to inner margin; postmedial line indistinct, grey, waved, with fuscous striation between it and subterminal line, to which it is closely approximated, excurved from costa to vein 4, then incurved; subterminal line defined by dark red-brown marks on inner side, slightly excurved at vein 6; a terminal series of slight dark points. Hind wing greyish suffused with brown and with a reddish tinge, the cilia pale rufous; the underside whitish irrorated with red-brown; a discoidal point and sinuous postmedial line.

Hab. Kashmir, Narkundah (*McArthur*), 1 ♂ type. *Exp.* 42 millim.

1741. Monima ferrosticta. (Plate XC. fig. 14.)

Semiophora ferrosticta, Hmpsn. Moths Ind. ii. p. 205 (1894).

♂. Head and thorax grey-white, slightly mixed with pale brown and dorsally tinged with ochreous; palpi at sides, a bar across frons, and gulæ dark brown; fore legs dark brown on inner side; abdomen fulvous brown, the base and ventral surface grey, the genital tufts white. Fore wing pale grey sparsely irrorated with brown; subbasal line represented by a dark point in cell; antemedial line indistinct, oblique from costa to submedian fold, then slightly angled inwards on vein 1; orbicular represented by a slightly curved, elongate, reddish-brown mark with yellowish edges; reniform large, indistinctly defined by yellowish and with a curved brown mark below it; a diffused medial fuscous shade angled at median nervure; postmedial line indistinct, dentate, with more prominent points at the veins, bent outwards below costa, excurved to vein 4, then oblique; subterminal line represented by a series of small dark brown and fulvous spots, slightly angled outwards at vein 7 and excurved at middle, the area beyond it tinged with fuscous; a terminal series of dark points. Hind wing grey tinged with brown; the cilia whitish; the underside whitish sparsely irrorated with brown, a dark

discoidal lunule and sinuous postmedial line with dark striæ at the veins.

Hab. Kashmir, Narkundah (*McArthur*), 1 ♂ type. *Exp.* 42 millim.

1742. Monima munda.

Noctua munda, Schiff. Wien. Verz. p. 76 (1776); Esp. Schmett. iii. pl. 52. f. 6; Hübn. Eur. Schmett., Noct. f. 166; Steph. Ill. Brit. Ent., Haust. ii. p. 141; Staud. Cat. Lep. pal. p. 202.
Noctua gemina, Bork. Eur. Schmett. iv. p. 705 (1792).
Bombyx geminatus, Haw. Lep. Brit. p. 121 (1803).
Bombyx bimaculatus, Haw. Lep. Brit. p. 121 (1803).
Noctua lota, Dup. Hist. Nat. Lép. Fr. vi. p. 111, pl. 80. f. 3 (1826).
Tæniocampa immaculata, Staud. Cat. p. 114 (1871).

Head and thorax pale rufous to brownish grey; sides of palpi and frons black-brown; abdomen ochreous brown. Fore wing pale red-brown to olive-grey, more or less striated with dark brown and irrorated with black; traces of a waved subbasal line from costa to submedian fold and of an oblique, waved antemedial line; orbicular and reniform large with pale annuli, the former round, the latter sometimes with some fuscous in its lower part; subterminal line pale, slightly angled outwards at vein 7 and excurved at middle, with small black spots on its inner side above and below vein 5, a point below costa and two above inner margin; a terminal series of minute points. Hind wing ochreous suffused with fuscous brown; cilia pale, with a brown line through them; the underside whitish irrorated with fuscous, a black discoidal lunule and postmedial series of striæ on the veins.

Ab. 1. *immaculata*. Fore wing without black spots on the subterminal line.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Switzerland, Frey Coll.; Hungary, Leech Coll.; Russia, Leech Coll.; Amurland, Ussuri; Japan, Kiushiu, 1 ♂, Yokohama (*Jonas*, *Pryer*, *Manley*), 1 ♂, 5 ♀. *Exp.* 40–50 millim.

Larva. Meyr. Brit. Lep. p. 74; Barrett, Lep. Brit. v. p. 217, pl. 212. f. 2.

Pale ochreous, much marked with brown; tubercular dots white; dorsal line pale, edged with brown; spiracular line pale, marked with white on somites 4–7 or part of them, edged above by a dark brown or blackish stripe; hinder edge of somite 12 pale preceded by dark spots; head marked with brown or black. Food-plants: Oak, birch, poplar, etc. 5–6.

1743. Monima lizetta.

Orthosia lizetta, Butl. A. M. N. H. (5) i. p. 167 (1878); id. Ill. Het. B. M. ii. p. 30, pl. 30. f. 8.

Grey with an olive tinge to pale reddish; sides of palpi and frons black. Fore wing with more or less brown irroration; traces of a waved subbasal line from costa to submedian fold; antemedial line represented by points on the veins, costa, and inner

margin; orbicular and reniform with indistinct pale outlines, the former round or oblique elliptical, often with a black point on inner side, the latter with its lower part filled in with black; traces of a medial shade sometimes present; postmedial line represented by a series of black points on the veins, excurved from costa to vein 4, then oblique; subterminal line prominent, ochreous defined by red-brown on inner side, with some fuscous before it at costa and discal fold, and a large diffused patch on outer side below apex, angled outwards at vein 7 and slightly incurved below vein 3; a terminal series of black points. Hind wing ochreous white suffused with fuscous; the cilia pale; the underside whitish slightly irrorated with brown, a small discoidal spot and punctiform sinuous postmedial line.

Hab. Japan, Yokohama (*Jonas*, *Pryer*), 6 ♂, 6 ♀, type, Kiushiu, 2 ♂. *Exp.* 40 millim.

1744. Monima populeti.

Bombyx populeti, Fabr. Ent. Syst. iii. p. 476 (1793); Dup. Lép. Fr. Suppl. iii. p. 311, pl. 29. f. 1; Herr.-Schäff. Eur. Schmett. ii. p. 202, Noct. f. 109; Staud. Cat. Lep. pal. p. 201.
Bombyx subplumbea, Haw. Lep. Brit. p. 242 (1809).
Orthosia intermedia, Steph. Ill. Brit. Ent., Haust. ii. p. 140 (1829).
Noctua ocularis, Frey. Beitr. i. p. 168, pl. 95. f. 2 (1833).
Orthosia gracilis, Steph. Ill. Brit. Ent., Haust. ii. p. 141 (nec Schiff.).
Tæniocampa tremuleti, Tetens, Verh. Ver. Hamb. ii. p. 161 (1876).

Head and thorax brown mixed with grey; abdomen ochreous brown. Fore wing leaden grey, often more or less suffused with fuscous and sometimes with a reddish tinge on medial area; an indistinct subbasal line from costa to submedian fold; antemedial line rather indistinct, waved, excurved in submedian interspace; orbicular and reniform large, with fuscous centres and pale annuli, the former round, the latter with some rufous suffusion round it; an indistinct medial shade excurved at middle; postmedial line indistinct, dentate, excurved from costa to vein 4, then incurved and angled outwards at vein 1; subterminal line whitish, more or less broken up into striæ, defined on inner side by a series of rufous or sometimes black spots, angled outwards at vein 7 and incurved below vein 3; a terminal series of black points. Hind wing grey suffused with fuscous brown, the underside whitish strongly irrorated with brown, a black discoidal spot and sinuous postmedial line.

Hab. Britain, Scotland, Leech Coll., England (*Doubleday*); France, Sand Coll.; Germany, Zeller Coll.; Switzerland, Frey Coll.; Scandinavia; Russia, Livonia, Zeller Coll., Urals. *Exp.* 36–40 millim.

Larva. Meyr. Brit. Lep. p. 74; Barrett, Lep. Brit. v. p. 204, pl. 210. f. 1.

Pale green or greenish white; dorsal, subdorsal, and spiracular lines whitish; head pale greenish ochreous, more or less marked with black; pupa between joined leaves. Food-plants: Poplar, aspen. 5–6.

1745. Monima miniosa.

Noctua miniosa, Schiff. Wien. Verz. p. 88 (1776); Hübn. Eur. Schmett., Noct. f. 174; Dup. Lép. Fr. vi. p. 138, pl. 81. f. 6; Steph. Ill. Brit. Ent., Haust. ii. p. 144; Staud. Cat. Lep. pal. p. 201.
Bombyx rubricosa, Esp. Schmett. iii. pl. 75. ff. 3, 4 (nec Fabr.).

Head and thorax pale rufous; abdomen ochreous white, the anal tuft tinged with rufous. Fore wing pale yellowish, more or less strongly suffused with rufous, especially on medial area between subcostal nervure and vein 1, and slightly irrorated with black; traces of a pale subbasal line from costa to submedian fold; an indistinct, oblique, waved antemedial line defined by pale colour on inner side; claviform sometimes faintly defined by reddish; orbicular and reniform with greyish centres defined by rufous and pale annuli defined by rufous, the former round; postmedial line minutely dentate and defined by pale yellowish on outer side, excurved from costa to vein 4, then strongly incurved; subterminal line represented by a series of yellowish spots defined on inner side by somewhat dentate rufous marks, slightly angled outwards at vein 7 and incurved below vein 3; a terminal series of dark points; cilia tinged with pink. Hind wing white; the veins towards termen irrorated with pinkish; a pinkish terminal line; the underside with the costal area irrorated with pink and black, a black discoidal point and traces of a sinuous postmedial line.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Corsica; Italy; Scandinavia; Russia; Bulgaria; Asia Minor, Pontus, Lydia. *Exp.* 36 millim.

Larva. Meyr. Brit. Lep. p. 74; Barrett, Lep. Brit. v. p. 194, pl. 208. f. 2.

Blue-grey to pale pinkish brown, reticulated with black; dorsal line yellow, irregular, edged by a series of black spots followed by another of black points; subdorsal line yellow, sometimes obsolete; spiracular line broad, yellow, dotted with black, edged above by black spots; head marked with black. Food-plants: Oak, hawthorn, rose, etc. 5–6.

1746. Monima ferrigera. (Plate XC. fig. 15.)

Tæniocampa ferrigera, Smith, Trans. Am. Ent. Soc. xxi. p. 78, pl. v. f. 6 (1894); Dyar, Cat. Lep. N. Am. p. 166.

♀. Head and thorax whitish mixed with ferruginous; antennæ white at base; abdomen ochreous white irrorated with fuscous. Fore wing ochreous white irrorated with ferruginous, the veins irrorated with black scales; the costa ferruginous, with short white streaks at the lines; the subbasal line represented by slight ferruginous marks below costa and cell; antemedial line ferruginous, oblique from costa to submedian fold; claviform and orbicular absent; reniform well developed, with ferruginous centre and defined by some black scales; medial line arising from a small triangular ferruginous patch on costa, then slightly curved; post-

medial line minutely waved, bent outwards below costa, excurved to vein 4, then incurved; subterminal line only defined by ferruginous suffusion on inner side, slightly angled outwards at vein 7 and dentate at veins 4, 3; a waved dark terminal line. Hind wing pinkish white, irrorated with fuscous; the underside with black discoidal lunule, slight curved postmedial line, and terminal series of points.

Hab. Canada, Br. Columbia, Victoria, 1 ♀; U.S.A., Oregon, Corvallis, 1 ♀. *Exp.* 40 millim.

1747. Monima stabilis.

Noctua stabilis, Schiff. Wien. Verz. p. 76 (1776); Hübn. Eur. Schmett., Noct. f. 171; Dup. Lép. Fr. vi. pl. 81. f. 2; Steph. Ill. Brit. Ent., Haust. ii. p. 143; Staud. Cat. Lep. pal. p. 201.
Noctua cerasi, Fabr. Spec. Ins. ii. p. 219 (1781).
Bombyx obliqua, De Vill. Ent. Linn. ii. p. 189, pl. 5. f. 7 (1789).
Bombyx junctus, Haw. Lep. Brit. p. 123 (1803).
Noctua pallida, Haw. Lep. Brit. p. 242 (1809).
Noctua rufannulata, Haw. Lep. Brit. p. 243 (1809).

Grey-brown to red-brown; head and thorax often irrorated with grey; sides of palpi and frons black. Fore wing more or less strongly irrorated with grey and black; an indistinct, somewhat waved, subbasal line from costa to submedian fold, often with a black point beyond it in cell; an indistinct, oblique, waved antemedial line; claviform sometimes traceable and defined by whitish above; orbicular and reniform large, defined by whitish, the former round, the latter with some black in lower part; a medial shade oblique from costa to lower angle of cell, then incurved; postmedial line more or less indistinct, minutely dentate and produced to points on the veins, excurved from costa to vein 4, then incurved; subterminal line whitish, slightly defined by brown on inner side, slightly angled outwards at vein 7 and incurved at vein 3; the veins of terminal area streaked with white; a terminal series of black points. Hind wing fuscous brown; cilia pale reddish; the underside whitish irrorated with brown, a black discoidal spot and punctiform postmedial line.

Ab. 1. *juncta*. Fore wing with the orbicular confluent with the reniform.

Hab. Britain, Leech Coll., N. Wales (*Salvage*); France, Sand Coll.; Germany, Zeller Coll.; Switzerland, Frey Coll.; Russia; Asia Minor, Pontus; Syria, Lebanon (*Pratt*), 1 ♀, Mardin. *Exp.* 34–40 millim.

Larva. Meyr. Brit. Lep. p. 73; Barrett, Lep. Brit. v. p. 202, pl. 209. f. 2.

Green, with numerous yellowish-white dots; dorsal, subdorsal, and spiracular lines yellowish white, sometimes very indistinct; 1st somite in front and anal somite behind yellowish white; head green, sometimes with black dots. Food-plants: Elm, oak, *Salix*, etc. 5–7.

*1748. Monima stenoptera.

Tæniocampa stenoptera, Staud. Rom. Mém. vi. p. 497, pl. ix. f. 6 (1892); id. Cat. Lep. pal. p. 201.

♂. Head and thorax pale red-brown, abdomen paler. Fore wing pale red-brown, the postmedial area tinged with fuscous; antemedial line yellowish, slightly incurved from costa to median nervure, then slightly excurved; orbicular and reniform defined by yellowish, rather narrow, the former oblique elliptical; a dark medial shade, diffused from costa to median nervure, then oblique; a yellowish postmedial line outwardly oblique from costa to vein 7, then inwardly oblique, some pale points beyond it on costa; subterminal line yellowish, oblique, slightly incurved; the veins of terminal area yellowish. Hind wing brownish ochreous.

Hab. Amurland, Ussuri. *Exp.* 38 millim. This species is unknown to me.

1749. Monima rubrescens. (Plate XC. fig. 16.)

Apamea rubrescens, Wlk. xxxii. 671 (1865); Smith, Cat. Noct. N. Am. p. 206.
Tæniocampa venata, Smith, Ent. Am. vi. p. 123 (1890).

♂. Head and thorax pale rufous with a yellowish tinge; palpi blackish at sides; abdomen ochreous irrorated with reddish brown. Fore wing reddish ochreous, thickly striated with rufous, the medial area suffused with rufous; the subbasal line represented by a curved series of three black points, below costa and in and below cell; antemedial line obsolete; orbicular and reniform well developed and with ochreous annuli, the former round with ochreous centre striated with rufous, the latter filled in with fuscous; the postmedial line represented by a series of short, very indistinct whitish and black streaks on the veins; subterminal line hardly traceable, ochreous; a terminal series of blackish points. Hind wing ochreous, evenly suffused with fuscous brown; the cilia ochreous; the underside ochreous white irrorated with fuscous, a discoidal spot, postmedial series of points on the veins and some points on termen.

Hab. Canada (*Pettit*), 2 ♂; U.S.A., New Hampshire (*Kemp*), 1 ♀, New York, Pennsylvania (*Kemp*), 1 ♂. *Exp.* 44 millim.

1750. Monima cruda.

Noctua cruda, Schiff. Wien. Verz. p. 77 (1776); Kleem. Beitr. Ins. Ges. i. pl. 46; Steph. Ill. Brit. Ent., Haust. ii. p. 144.
Noctua pulverulenta, Esp. Schmett. iii. pl. 76. ff. 5, 6 (1786); Staud. Cat. Lep. pal. p. 201.
Bombyx nanus, Haw. Lep. Brit. p. 244 (1809).
Noctua pusilla, Haw. Lep. Brit. p. 244 (1809).
Noctua ambigua, Hübn. Eur. Schmett., Noct. f. 173 (1827); Dup. Lép. Fr. vi. p. 61, pl. 76. f. 3.

Head and thorax grey, more or less strongly tinged with

purplish red; palpi blackish at sides; abdomen grey-brown, the anal tuft tinged with rufous. Fore wing grey-brown, more or less strongly tinged with rufous and slightly irrorated with black; the subbasal line represented by black points on costa and in and below cell, the antemedial line by points on costa, veins, and inner margin; orbicular and reniform with fuscous centres and pale annuli, the former small, round, the latter constricted at middle; postmedial line represented by a curved series of points on the veins; subterminal line indistinct, pale, defined on inner side by very obscure brown marks, angled outwards at vein 7 and slightly excurved at middle; a terminal series of black points. Hind wing pale, irrorated and suffused with fuscous brown; the cilia whitish with a brown line through them; the underside whitish irrorated with brown, a discoidal spot and postmedial series of points on the veins.

Hab. Britain, Leech Coll.; France; Germany, Zeller Coll.; Switzerland, Frey Coll.; N. Spain; Italy; Scandinavia; Russia; Armenia; Asia Minor, Pontus, Taurus. *Exp.* 28–32 millim.

Larva. Meyr. Brit. Lep. p. 74; Barrett, Lep. Brit v. p. 197, pl. 209. f. 1.

Green or brown with pale yellowish dots; dorsal and subdorsal lines pale yellow or whitish; spiracular line yellow, often spotted with reddish; posterior edge of anal somite yellowish or whitish; head sometimes marked with white or black. Food-plants: Oak, hawthorn, *Salix*, etc. 5–6.

1751. Monima fausta.

Orthosia fausta, Leech, P. Z. S. 1889, p. 513, pl. 50. f. 2.

Grey-brown to ochreous brown or dull red-brown; sides of palpi and frons blackish; tarsi with dark bands; abdomen fuscous brown. Fore wing more or less strongly irrorated with brown; an indistinct waved subbasal line from costa to submedian fold, with a black point beyond it in cell and often another above vein 1; antemedial line represented by black points on costa, submedian and median nervures, vein 1 and inner margin, sometimes traceable as a waved line; orbicular and reniform with faint pale annuli, the former round; traces of an oblique medial shade sometimes present from cell to inner margin; postmedial line represented by a series of dark points on the veins, excurved from costa to vein 4, then oblique; subterminal line indistinct, pale, slightly defined by somewhat punctiform brown marks on inner side, or almost obsolete, slightly incurved at discal and submedian folds; a terminal series of dark points, the termen crenulate. Hind wing fuscous brown, the cilia ochreous with a brown line through them; the underside pale, irrorated with brown, a dark discoidal lunule and rather punctiform sinuous postmedial line.

Hab. Japan, Yezo (*Pryer*), 1 ♂, Yokohama (*Pryer*), 3 ♂, 3 ♀, type. *Exp.* 36–40 millim.

1752. Monima flaviannula. (Plate XC. fig. 17.)

Tæniocampa flaviannula, Smith, Journ. N.Y. Ent. Soc. vii. p. 225 (1899); Dyar, Cat. Lep. N. Am. p. 166.

♂. Head and thorax reddish brown, the hairs tipped with grey, the metathoracic tuft darker, tipped with grey; abdomen ochreous whitish mixed with dark brown, the anal tuft reddish. Fore wing rufous, slightly irrorated with fuscous; antemedial, medial, and postmedial lines marked by dark points on costa; traces of a pale excurved portion of the antemedial line below the cell; reniform darker rufous defined by yellowish; subterminal line indistinct, pale, slightly defined by fuscous on inner side towards costa, angled outwards at vein 7 and excurved at middle. Hind wing pinkish white, thickly irrorated with dark brown; the underside paler, with dark discoidal spot and postmedial series of striæ on the veins.

Hab. Colorado, Glenwood Springs (*Barnes*), 4 ♂. *Exp.* 44 millim.

1753. Monima annulimacula. (Plate XC. fig. 18.)

Tæniocampa annulimacula, Smith, Trans. Am. Ent. Soc. xviii. p. 117 (1891); id. Cat. Noct. N. Am. p. 204.

♂. Head and thorax pale fawn-brown; sides of palpi and frons blackish; legs irrorated with black; abdomen grey-brown, with the anal tuft rufous. Fore wing greyish fawn with slight dark irroration; the costal edge reddish; subbasal line obsolete; antemedial line indistinct, waved, with dark points at the veins, nearly erect, or almost obsolete; orbicular moderate, round, with indistinct yellowish annulus or obsolete; reniform with more distinct yellowish annulus defined on inner side by blackish scales; a slight indistinct medial line excurved from costa to below cell; postmedial line represented by a series of black points on the veins, bent outwards below costa, excurved to vein 4, then oblique; subterminal line indistinct, pale, slightly defined by black scales on inner side, angled outwards at vein 7 and excurved at middle; a series of black points just before termen. Hind wing whitish, tinged with pink and irrorated with fuscous; a discoidal lunule and fine waved terminal line; the underside with the discoidal lunule more prominent and traces of a series of postmedial points on the veins.

Hab. U.S.A., Texas, 1 ♂. *Exp.* 48 millim.

*1754. Monima addenda. (Plate XC. fig. 19.)

Tæniocampa addenda, Smith, Ent. Am. vi. p. 122 (1820); id. Cat. Noct. N. Am. p. 204.

♂. Head and thorax grey, mixed with dark brown and tinged with crimson; palpi blackish at tips; frons rufous, with two blackish patches at sides; abdomen brownish grey, the anal tuft

tinged with rufous. Fore wing grey suffused with pale yellow-brown; subbasal line represented by groups of black scales below costa and cell; an oblique, diffused, minutely waved antemedial line emitting short streaks on inner side on the veins; medial area irrorated with black except towards costa; orbicular and reniform small, with very indistinct black outlines, the former round, the latter a narrow lunule; postmedial line diffused, emitting short black streaks on the veins, excurved from costa to vein 4, then incurved, and at inner margin approximated to antemedial line. Hind wing brown suffused with fuscous; the underside grey irrorated with brown, a small discoidal spot.

♀. Head and thorax entirely suffused with crimson-red; abdomen ochreous brown. Fore wing entirely suffused with crimson-red; the line absent, the medial area not irrorated with black; orbicular and reniform filled in with fuscous. Hind wing tinged with red, the cilia red.

Hab. U.S.A., California, in Coll. Schaus. *Exp.* 36 millim.

*1755. **Monima carminata.** (Plate XC. fig. 20.)

Tæniocampa carminata, Smith, Ent. Am. vi. p. 121 (1890); id. Cat. Noct. N. Am. p. 202.

♂. Head and thorax pale ochreous brown to fulvous, strongly tinged with purple; abdomen ochreous yellow. Fore wing pale greyish ochreous to fulvous, the veins suffused with purplish pink; no other markings except a pale, very ill-defined discoidal spot representing the reniform. Hind wing fuscous with a yellowish tinge; the cilia yellow; the underside pale suffused with brown, the veins and a terminal line brown.

Hab. U.S.A., Colorado, in Coll. Schaus. *Exp.* 36–40 millim.

*1756. **Monima mys.** (Plate XC. fig. 21.)

Stretchia mys, Dyar, Cat. Lep. N. Am. p. 168 (1902); id. Proc. Ent. Soc. Wash. v. p. 294 (1903).

♂. Head and thorax dark purple-brown; antennæ paler; abdomen pale suffused with purplish red. Fore wing dark purple-brown with slight greyish irroration; the markings obsolete. Hind wing whitish tinged with purplish red, especially towards margins.

Hab. U.S.A., California. *Exp.* 42 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

Sect. III. Antennæ of male strongly serrate and fasciculate.

A. Fore wing with the subterminal line angled inwards in discal fold.
  a. Fore wing red-brown without black patch beyond lower angle of cell ..... *odiosa*.
  b. Fore wing grey with black patch beyond lower angle of cell ..... *nigrovenalis*.

B. Forewing with the subterminal line not angled inwards in discal fold.
  a. Fore wing with the subterminal line represented by a series of small black spots ..... *arthrolita*.
  b. Fore wing with the subterminal line pale.
    a^1. Fore wing with series of small black or red-brown spots beyond subterminal line..... *revicta*.
    b^1. Fore wing with more or less prominent small dentate black or brown marks before subterminal line.
      a^2. Fore wing with small dentate black mark before subterminal line in submedian interspace ..... *garmani*.
      b^2. Fore wing without small dentate black mark before subterminal line in submedian interspace ..... *incerta*.
    c^1. Fore wing without small dentate marks before subterminal line.
      a^2. Fore wing with the subterminal line defined by brown on inner side.
        a^3. Hind wing wholly suffused with brown.
          a^4. Fore wing with the subterminal line hardly excurved at middle.
            a^5. Fore wing with slight dark irroration.
              a^6. Fore wing with the ground-colour blue-grey..... *opima*.
              b^6. Fore wing with the ground-colour rufous ..... *paromœa*.
            b^5. Fore wing with prominent dark striation.. *pacifica*.
          b^4. Fore wing with the subterminal line distinctly excurved at middle.
            a^5. Fore wing with the postmedial line continuous .. .. *alurina*.
            b^5. Fore wing with the postmedial line reduced to a series of points ..... *alia*.
        b^3. Hind wing white, the terminal area suffused with fuscous ..... *gracilis*.
      b^2. Fore wing with the subterminal line defined by brown on outer side ..... *cinnamomea*.

1757. Monima odiosa.

Agrotis odiosa, Butl. A. M. N. H. (5) i. p. 162 (1878); id. Ill. Het. B. M. iii. p. 14, pl. 44. f. 8.

Head and thorax bright red-brown, sometimes with a purplish tinge; palpi black at sides; abdomen ochreous, irrorated with brown and tinged with red. Fore wing bright chestnut to purplish brown sparsely irrorated with white, traces of a waved whitish subbasal line from costa to submedian fold; an indistinct oblique waved antemedial line; orbicular and reniform large, rather darker than ground-colour and with fine whitish annuli, the former round; an indistinct medial shade oblique from costa to median nervure, then incurved; postmedial line indistinct and slightly defined by grey on outer side, dentate, excurved from costa to vein 4, then strongly incurved, some pale points beyond it on costa; subterminal line angled outwards at vein 7 and incurved at discal and submedian folds, defined by grey on outer side, strongly at the folds; termen crenulate. Hind wing yellowish white tinged with brown to fuscous brown; the cilia rufous; the underside pale red

irrorated with brown, a dark discoidal spot and traces of a sinuous postmedial line.

Hab. Japan, Yokohama (*Jonas*, *Pryer*), 5 ♂, 3 ♀, type, Kiushiu, 1 ♀. *Exp.* 44 millim.

*1758. Monima nigrorenalis. (Plate XC. fig. 22.)

Leucania nigrorenalis, Hmpsn. Moths Ind. ii. p. 277 (1894).

♀. Head and thorax pale grey mixed with dark grey; palpi and frons at sides and antennæ blackish; tarsi ringed with white; abdomen red-brown. Fore wing whitish, slightly tinged with pale red-brown and irrorated and striated with blackish; subbasal line represented by slight black striæ from costa and cell; traces of a nearly straight antemedial line, with a small black spot beyond it on inner margin; orbicular represented by a small round black spot; reniform a rather narrow black lunule, its lower part connected by diffused black between veins 2 and 4 with the subterminal line; a prominent medial black bar from cell to inner margin; postmedial line bent outwards below costa, oblique to vein 6, then inwardly oblique and nearly obsolete below vein 4; subterminal line whitish, rather ill-defined, excurved at vein 7 and middle, some terminal black points; cilia white at base. Hind wing pale suffused with reddish brown; cilia whitish at base; the underside whitish irrorated with brown, a black discoidal spot, sinuous postmedial line, and some points on termen.

Hab. Sikhim (*Knyvett*), type † ♀ in Coll. Elwes. *Exp.* 42 millim.

1759. Monima arthrolita. (Plate XC. fig. 23.)

Graphiphora arthrolita, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 275 (1874) Smith, Cat. Noct. N. Am. p. 204.

Head and thorax pale fulvous brown; palpi blackish at sides; abdomen pale brown, irrorated and dorsally suffused with fuscous. Fore wing pale fulvous brown irrorated with fuscous; a small tuft of black scales at base; subbasal line obsolete; antemedial line indistinct, oblique from costa to median nervure, then erect and slightly waved; orbicular and reniform with very indistinct yellowish annuli, chiefly defined by the quadrate fuscous patch between them, the former round; a medial shade oblique from costa to lower angle of cell, incurved in submedian interspace; postmedial line remote from cell, crenulate, bent outwards below costa, excurved to vein 4, then oblique and with traces of another line on its inner side; subterminal line represented by a curved series of small black spots in the interspaces, somewhat incurved towards inner margin; a terminal series of small black spots. Hind wing fuscous brown with a yellowish tinge; cilia pale; the underside whitish tinged with pink and slightly irrorated with brown, a small discoidal spot and curved postmedial line.

Hab. U.S.A., California, Sanzalito, 1 ♂, 1 ♀, type. *Exp.*, ♂ 40, ♀ 44 millim.

1760. Monima revicta. (Plate XC. fig. 24.)

Tæniocampa revicta, Morr. Proc. Bost. Soc. N. H. xviii. p. 241 (1875) Smith, Cat. Noct. N. Am. p. 206.
Tæniocampa subterminata, Smith, Pr. U.S. Nat. Mus. x. p. 476 (1887); id. Cat. Noct. N. Am. p. 206.

Pale bluish or yellowish grey to deep red-brown; head and thorax irrorated with rufous; palpi bright rufous; tibiæ and tarsi rufous; abdomen grey irrorated with brown, the anal tuft fulvous. Fore wing irrorated with brown in the pale specimens, with white in the rufous ones; subbasal line rufous, defined by white on outer side, curved from costa to submedian fold; antemedial line rather indistinct, defined by white on inner side, oblique, waved; claviform with its extremity slightly defined by rufous; orbicular and reniform large, with whitish annuli defined by rufous, the former erect elliptical, the latter filled in with fuscous; a medial shade oblique from costa to lower angle of cell, where it is angled; postmedial line indistinct, whitish, bent outwards below costa, excurved to vein 4, then incurved, produced to a series of black and white points on the veins from vein 6 to inner margin; subterminal line white or pale yellowish, defined on outer side from vein 7 to inner margin by a series of rufous or typically black spots, angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing whitish irrorated with pale brown, the veins and terminal area tinged with brown; the underside white irrorated with brown, a discoidal lunule and postmedial series of short streaks on the veins.

Hab. Canada, Calgary (*Wolley-Dod*), 1 ♂, 1 ♀; U.S.A., Maine, New Hampshire, Massachusetts, Abington (*Bates*), 2 ♀, New York, Centre (*Bailey*), 2 ♀, Illinois. *Exp.* 44 millim.

1761. Monima garmani. (Plate XC. fig. 25.)

Graphiphora garmani, Grote, Can. Ent. xi. p. 28 (1879); Smith, Cat. Noct. N. Am. p. 206.

♂. Head and thorax dull reddish brown, the hairs tipped with grey; abdomen yellowish brown mixed with dark brown. Fore wing pale reddish suffused with fuscous brown; subbasal line obsolete; faint traces of a double, waved antemedial line; claviform represented by some black scales at its extremity; orbicular rather elongate elliptical, defined by black except above; reniform defined by black on inner side; postmedial line indistinct, bent outwards below costa, excurved to vein 4, then strongly incurved; subterminal line very indistinct, defined by a series of black spots on inner side from vein 7 to inner margin, obsolescent above and below vein 5. Hind wing ochreous white irrorated with brown; the underside with black discoidal point.

Hab. U.S.A., Illinois, 1 ♂ type, Iowa. *Exp.* 40 millim.

1762. Monima incerta.

Noctua incerta, Hüfn. Berl. Mag. iii. p. 298 (1767); Staud. Cat. Lep. pal. p. 201.
Noctua instabilis, Schiff. Wien. Verz. p. 76 (1776); Esp. Schmett. iv. pl. 151. f. 3; Hübn. Eur. Schmett., Noct. f. 165; Dup. Lép. Fr. vi. p. 130, pl. 81. f. 3; Steph. Ill. Brit. Ent., Haust. ii. p. 140.
Noctua trigutta, Esp. Schmett. iv. pl. 147. f. 4 (1790).
Noctua contracta, Esp. Schmett. iv. pl. 151. f. 2 (1790).
Noctua collinita, Esp. Schmett. iv. pl. 152. f. 6 (1790).
Bombyx nebulosus, Haw. Lep. Brit. p. 120 (1803).
Bombyx subsetaceus, Haw. Lep. Brit. p. 120 (1803).
Bombyx fuscatus, Haw. Lep. Brit. p. 122 (1803).
Bombyx angustus, Haw. Lep. Brit. p. 122 (1803).
Tæniocampa evanida, Butl. A. M. N. H. (5) iv. p. 362 (1879).
Tæniocampa pallida, Lampa, Ent. Tidskr. 1885, p. 72.
Tæniocampa pallida, Staud. Stett. ent. Zeit. 1888, p. 32.
Tæniocampa pallidior, Staud. Cat. Lep. pal. p. 201 (1901).

Head and thorax rufous more or less strongly mixed with grey; palpi black at sides; abdomen grey irrorated with brown, the anal tuft and ventral surface tinged with rufous. Fore wing grey, thickly irrorated and striated with brown and more or less strongly suffused with rufous; an indistinct subbasal line from costa to submedian fold, followed by a dark point in cell; antemedial line indistinct, slightly sinuous; orbicular and reniform large, with whitish annuli, the former oblique elliptical, the latter with its lower part filled in with fuscous; an ill-defined medial shade oblique from

Fig. 114.—*Monima incerta*, ♂. ½.

costa to lower angle of cell, then incurved; postmedial line indistinct, dentate or reduced to a series of minute dark striæ on the veins, excurved from costa to vein 4, then incurved; subterminal line whitish, defined by brown on inner side, forming somewhat dentate marks at middle, angled outwards at vein 7 and slightly excurved at middle; a terminal series of black points. Hind wing whitish, suffused and irrorated with fuscous brown, especially on terminal area; the underside whitish irrorated with brown, a black discoidal spot and postmedial series of points on the veins.

Ab. 1. *fuscata*. Fore wing almost uniform fuscous.

Ab. 2. *pallida*. Fore wing paler and greyer.

Ab. 3. *pallidior*. Much paler: fore wing grey-white; hind wing whitish.

Ab. 4. *evanida*. Like *pallidior* but larger, the subterminal line strongly defined by rufous.

Hab. Britain, Scotland, Leech Coll., England, Leech Coll.; France, Sand Coll.; Germany, Zeller Coll.; Hungary, Leech Coll.; Switzerland, Frey Coll.; Spain; Italy; Scandinavia; Russia, Livonia, St. Petersburg, Zeller Coll.; Armenia; Asia Minor, Pontus; W. Siberia, Altai; W. Turkestan, Ala Tau, Ferghana, Issyk-Kul; E. Siberia; Japan, Yesso (*Pryer*), 1 ♂, Yokohama (*Jonas*, *Pryer*), 6 ♂, 1 ♀, type *evanida*, Kiushiu, 1 ♂, 1 ♀; Punjab, Simla (*Nurse*), 1 ♀. *Exp.* 40–50 millim.

Larva. Meyr. Brit. Lep. p. 72; Barrett, Lep. Brit. v. p. 213, pls. 211, 212. f. 1.

Green, with numerous yellowish or whitish dots; dorsal and spiracular lines pale yellow or whitish; subdorsal line formed of pale dots; head green. Food-plants: Oak, poplar, hawthorn, etc. 5–7.

1763. Monima opima.

Noctua opima, Hübn. Eur. Schmett., Noct. f. 424 (1827); Staud. Cat. Lep. pal. p. 201.
Noctua firma, Hübn. Eur. Schmett., Noct. ff. 676, 677 (1827).
Tæniocampa mediolugens, Schultz, Illustr. Zeit. Ent. v. p. 349 (1900).

Head and thorax grey mixed with reddish brown; palpi brown or blackish at sides; abdomen grey tinged with reddish brown. Fore wing grey irrorated with red-brown, the medial area suffused with red-brown; the subbasal line represented by a slight striga from costa; the antemedial line indistinct, erect, waved; claviform sometimes slightly defined by whitish; orbicular and reniform large, with grey centres irrorated with brown and whitish annuli, the former rounded; postmedial line defined by whitish on outer side, minutely waved, bent outwards below costa, slightly incurved at discal fold and strongly below vein 4; subterminal line whitish, defined by red-brown on inner side, angled outwards at vein 7, then nearly straight or slightly excurved at middle; a series of dark points just before termen; cilia tinged with rufous. Hind wing whitish irrorated with brown; the underside tinged with pink, a discoidal spot and indistinct curved postmedial line.

Ab. 1. Greyer; fore wing without rufous suffusion on medial area, but with an indistinct medial shade.

Ab. 2. Wholly suffused with fuscous brown with a reddish tinge.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller Coll.; Austria, Carniola, Zeller Coll.; Switzerland, Frey Coll.; Scandinavia; Russia, Leech Coll., Urals; W. Siberia, Altai, Zeller Coll.; W. Turkestan, Ala Tau. *Exp.* 36–40 millim.

Larva. Meyr. Brit. Lep. p. 73; Barrett, Lep. Brit. v. p. 208, pl. 210. f. 2.

Dull olive-green to red-brown with darker freckles; dorsal and subdorsal lines paler; spiracular line yellow or yellowish green, dark-margined above; head brownish. Food-plants: *Salix* and Rose. 5, 6.

1764. Monima paromœa, n. sp. (Plate XC. fig. 26.)

Semiophora stabilis, Leech, Trans. Ent. Soc. 1900, p. 75 (nec Schiff.).

Head and thorax pale rufous, sometimes greyish or purplish brown; palpi black at sides; abdomen pale grey-brown, the anal tuft rufous. Fore wing pale rufous to grey-brown or purplish brown irrorated with fuscous; an indistinct waved subbasal line from costa to submedian fold, with a point beyond it in cell sometimes present; antemedial line indistinct, excurved in interspaces, reduced to points on the veins or obsolete; orbicular and reniform large, with whitish annuli, their centres often defined by fuscous, the former oblique elliptical, sometimes conjoined to latter inferiorly; postmedial line indistinct, dentate, reduced to a series of points on the veins or almost obsolete, excurved from costa to vein 4, then incurved; subterminal line whitish, defined by rufous or brown on inner side, very slightly angled outwards at vein 7 and incurved below vein 3; a terminal series of dark points. Hind wing yellowish white, almost uniformly suffused with fuscous brown, the cilia pale reddish; the underside pale irrorated with brown, a black discoidal spot and punctiform sinuous postmedial line.

Hab. Japan, Yesso, Yokohama (*Jonas*, *Pryer*), 6 ♂, 6 ♀, type. *Exp.* 36–40 millim.

1765. Monima pacifica. (Plate XC. fig. 27.)

Tæniocampa pacifica, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 120 (1874); Smith, Cat. Noct. N. Am. p. 205.

Head and thorax pale grey-brown, often with a reddish or olive tinge; sides of palpi and frons black; abdomen pale grey-brown irrorated with fuscous. Fore wing pale ochreous brown, striated with rufous and irrorated with fuscous, or more or less completely suffused with purplish or red-brown; a small tuft of black scales at base; the subbasal line represented by a slight striga from costa, a point below cell, and another further from base in the cell; the antemedial line represented by a more or less complete series of black points; orbicular and reniform large, with indistinct pale annuli, the former oblique elliptical, very indistinct, the latter with its lower part filled in with fuscous; an obscure medial shade, oblique from costa to lower angle of cell, where it is angled; postmedial line represented by an indistinct excurved pale part from costa to vein 6, then by a series of short black streaks on the veins interrupted by white points and closely approximated to the subterminal line, which is pale defined by fuscous on inner side, excurved at vein 7 and somewhat dentate at veins 4 and 3; a series of black points just before termen; a fine pale line at base of cilia. Hind wing whitish irrorated and suffused with fuscous; the underside with black discoidal spot, sinuous postmedial line, and some black points on termen.

Ab. 1. Underside of hind wing with black streak in the cell.

Hab. Canada, Vancouver (*Danby*), 5 ♂, 1 ♀; U.S.A., Colorado, California, Sanzalito, 3 ♂, type. *Exp.* 40–44 millim.

Larva. Green; dorsal and subdorsal lines white, narrow, faint; stigmatal line narrow; a white band on the hump of joint 12. —H. G. D.

1766. **Monima alurina.** (Plate XC. fig. 28.)

Tæniocampa alurina, Smith, Journ. N.Y. Ent. Soc. x. p. 47 (1902); Dyar, Cat. Lep. N. Am. p. 167.

Head and thorax clothed with brown hair tipped with grey; abdomen reddish brown. Fore wing purplish grey tinged with reddish brown and irrorated with black; subbasal line represented by dark marks below costa and cell; antemedial line oblique towards costa, then slightly sinuous; claviform absent; orbicular with obscurely defined grey annulus, round; reniform with dark centre and obscurely defined grey annulus; a medial shade, incurved below angle of cell; postmedial line indistinct, somewhat dentate, oblique from costa to vein 6 and incurved below vein 4; subterminal line indistinct, greyish, angled outwards at vein 7 and excurved at middle, narrowly defined by brown on inner side and with a patch before it on costal area; a terminal series of small black spots. Hind wing grey tinged with pink, the terminal area suffused with fuscous; the underside pinkish white irrorated with brown, a black discoidal spot and curved postmedial line.

Hab. U.S.A., New York, Illinois, Chicago, in Coll. J. B. Smith, Colorado, Berkeley (*Oslar*), 1 ♂. *Exp.* 42 millim.

1767. **Monima alia.** (Plate XC. fig. 29.)

Tæniocampa alia, Guen. Noct. i. p. 352 (1852); Smith, Cat. Noct. N. Am. p. 205.
Tæniocampa hibisci, Guen. Noct. i. p. 355 (1852).
Orthosia insciens, Wlk. xi. 746 (1857).
Orthodes instabilis, Fitch, 3rd Rep. N.Y. State Agr. Soc. xvi. p. 25 (1859), nec Schiff.
Tæniocampa confluens, Morr. Proc. Bost. Soc. N. H. xvii. p. 159 (1874).

Head and thorax red-brown mixed with grey; sides of palpi and frons blackish; abdomen brownish grey. Fore wing purplish grey, suffused with ferruginous red except on inner area; subbasal line very indistinct, greyish, from costa to submedian fold; antemedial line indistinct, waved, greyish, slightly defined on each side by brown; orbicular and reniform rather large, with grey annuli, the former elliptical, erect, the latter with its lower part filled in with fuscous; postmedial line greyish, slightly defined on each side by brown, waved, bent outwards below costa and incurved below vein 4, with a slight series of black points on the veins beyond it; subterminal line very indistinct, greyish, slightly defined by brown on inner side and with distinct dark brown marks before it above and below vein 5 and in submedian fold; a terminal series of dark points. Hind wing pale thickly irrorated with brown, the terminal

area suffused with brown; the underside with the costal area tinged with rufous, a dark discoidal spot and indistinct curved postmedial line.

Ab. 1. *hibisci*. Fore wing with the orbicular and reniform conjoined.

Hab. CANADA (*Norman*), 1 ♀, Calgary (*Wolley-Dod*), 1 ♂, 1 ♀; U.S.A., 1 ♀ type, Eastern States to Georgia and West to Mississippi States, 1 ♀ (*Doubleday*), type *insciens*, Missouri. *Exp.* 44 millim.

Larva. Green; dorsal and subdorsal lines yellowish white, faint, broken; stigmatal line narrow, running above the spiracles except on joints 2 and 12.—H. G. D.

1768. Monima gracilis.

Noctua gracilis, Schiff. Wien. Verz. p. 76 (1876); Hübn. Eur. Schmett., Noct. f. 168; Dup. Lép. Fr. vi. p. 141, pl. 82. f. 1; Frey. Neu Beitr. iv. pl. 317; Herr.-Schäff. Eur. Schmett., Noct. f. 383; Staud. Cat. Lep. pal. p. 202.
Noctua collinita, Esp. Schmett. iv. pl. 152. f. 6 (1796).
Noctua lepida, Scriba, Beitr. Ins. Ges. iii. pl. 18. f. 7 (1793).
Bombyx sparsus, Haw. Lep. Brit. p. 122 (1803); Steph. Ill. Brit. Ent., Haust. ii. p. 143.
Orthosia pallida, Steph. Ill. Brit. Ent., Haust. ii. p. 143 (1829).
Tæniocampa ella, Butl. A. M. N. H. (5) i. p. 167 (1878).
Tæniocampa pallidior, Staud. Stett. ent. Zeit. 1888, p. 32.
Tæniocampa rufescens, Cockerell, Entom. xxii. p. 4 (1889).

Head and thorax grey slightly irrorated with pale brown; palpi blackish at sides; abdomen tinged with rufous. Fore wing pale yellowish, suffused with grey-white and sparsely irrorated with black; subbasal line represented by a dark point in cell; traces of a pale, waved, antemedial line; claviform sometimes defined by whitish; orbicular and reniform large, defined by whitish, the former round; traces of a medial shade sometimes present; postmedial line represented by a series of black points on the veins, excurved from costa to vein 4, then oblique; subterminal line whitish, slightly defined by brown on inner side, slightly excurved below costa and at middle; a series of dark points just before termen; cilia tinged with rufous. Hind wing whitish irrorated and suffused with brown, especially on costal and terminal areas; cilia white; the underside white, the costal and terminal areas irrorated with fuscous, a slight discoidal spot and postmedial series of short striæ on the veins.

Ab. 1. *rufescens*. Head, thorax, and fore wing more or less strongly tinged with rufous.

Ab. 2. Fore wing suffused with fuscous brown.

Ab. 3. *pallidior*. Much paler and greyer.

Hab. BRITAIN, Leech Coll.; FRANCE, Sand Coll.; GERMANY, Zeller Coll.; SWITZERLAND, Frey Coll.; SPAIN; ITALY; SCANDINAVIA; RUSSIA, Leech Coll., Livonia; ARMENIA; AMURLAND, 1 ♀, Ussuri; JAPAN, Hakodaté, 1 ♀, Yokohama (*Jonas*, *Pryer*), 5 ♂, 4 ♀, type *ella*. *Exp.* 40–46 millim.

Larva. Meyr. Brit. Lep. p. 73; Barrett, Lep. Brit. v. p. 221, pl. 213.
Dull green or pinkish brown; dorsal and subdorsal lines paler; spiracular line pale greenish, rarely pinkish, edged above by dark grey or black; head pale brown or greenish. Food-plants: *Salix*, *Carduus*, *Lysimachia*, etc. 5–7.

1769. Monima cinnamomea.

Megasema cinnamomea, Moore, P. Z. S. 1881, p. 352, pl. 38. f. 6; Hmpsn. Moths Ind. ii. p. 277.

♀. Head and thorax pale rufous; palpi at tips and shaft of antennæ above white; tegulæ with bright rufous line before tips which are white; abdomen brown. Fore wing whitish tinged with rufous and irrorated with brown; subbasal line rufous, defined by white on outer side, straight from costa to submedian fold; antemedial line defined by white on inner side, straight, oblique; orbicular large, with slight white annulus defined by rufous, oblique elliptical; reniform quadrate, defined at sides by white and rufous; an indistinct dark medial line; postmedial line rufous, defined by white on outer side, straight, oblique; subterminal line defined by white on inner side, straight, oblique, the area beyond it somewhat darker; a terminal series of dark points. Hind wing pale fuscous tinged with pinkish and irrorated with brown, the termen and cilia pale rufous; the underside with discoidal lunule and curved postmedial line.
Hab. Sikhim, 7600 feet (*Dudgeon*), 1 ♀. *Exp.* 46 millim.

Genus **PALPONIMA**, nov.

Type, *P. orthosioides.*
Proboscis fully developed; palpi obliquely porrect, the 2nd joint extending about the length of head and fringed with long hair below, the 3rd joint long and dilated at extremity; frons with roughened truncate conical prominence; eyes large, rounded; antennæ of male bipectinate, with long branches to apex, of female ciliated; head and thorax clothed with hair only, the latter with triangular ridge-like dorsal crest; tibiæ moderately hairy; abdomen with dorsal crest on 1st segment only. Fore wing narrow, the apex rectangular, the termen nearly straight to vein 3, then oblique; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10, anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

1770. Palponima orthosioides.

Semiophora orthosioides, Butl. Ill. Het. B. M. vii. p. 56, pl. 128. f. 1 (1889); Hmpsn. Moths Ind. ii. p. 205.

Head and thorax dark brown mixed with grey; palpi whitish at tips; tegulæ with black line just before the tips, which are whitish; abdomen ochreous grey with some dark irroration. Fore wing pale grey-brown to dark grey-brown with fuscous irroration; subbasal line double, waved, from costa to vein 1; antemedial line

double, nearly even, slightly curved and oblique; orbicular and reniform moderate, with blackish centres and pale brown annuli defined by black; medial line excurved from costa to median nervure; postmedial line more or less distinct, bent outwards below costa, excurved to vein 4, then incurved, with a series of short black streaks on the veins beyond it interrupted by white points; some pale points on costa before the subterminal line,

Fig. 115.—*Palponima orthosioides*, ♂. ½. (From Moths Ind. vol. ii.)

which is whitish tinged with rufous and very slightly and evenly curved; a terminal series of slight dark points. Hind wing fuscous brown; the underside greyer irrorated with fuscous, a black discoidal lunule and curved postmedial line.

Ab. 1. Much paler and greyer; fore wing with a series of black spots before the subterminal line and somewhat dentate at middle. —Simla.

Hab. Punjab, Mandi (*Hocking*), 3 ♂, 5 ♀, type, Simla (*Nurse*), 1 ♀. *Exp.* 32 millim.

Genus **CLAVIPALPULA**.

Type.

Clavipalpula, Staud. Rom. Mém. vi. p. 499 (1892) ..... *aurariæ*.

Proboscis fully developed; palpi with the 2nd joint obliquely upturned and fringed with hair in front, the 3rd long, porrect, and somewhat dilated at extremity; frons smooth; antennæ of male strongly ciliated; head and thorax clothed with hair only and without distinct crests; tibiæ moderately hairy; abdomen with dorsal crest at base. Fore wing with the termen crenulate and obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

1771. Clavipalpula aurariæ.

Tæniocampa aurariæ, Oberth. Ét. Ent. v. p. 76, pl. iii. f. 6 (1880); Staud. Cat. Lep. pal. p. 201.

♀. Head and thorax whitish tinged with rufous, especially on tegulæ; sides of palpi and frons dark brown; abdomen brownish grey. Fore wing grey-white irrorated with red-brown, the medial area red-brown except inner margin; a small black spot below base of cell, with the subbasal line just beyond it represented by oblique black striæ from costa and cell; antemedial line indistinctly double, very oblique, sinuous and incurved to inner margin; median nervure and veins 3, 4 streaked with whitish; orbicular

and reniform large, whitish, the former concave towards base, open above and below and tinged with brown above, the latter with its centre tinged with rufous, constricted at middle; post-medial line indistinctly double, bent outwards below costa, slightly incurved to vein 4, then strongly incurved and sinuous; subterminal line almost obsolete, waved, pale, with a series of brown

Fig. 116.—*Clavipalpula auraria*, ♀. ½.

points on it and defined by brown on inner side at costa; a terminal series of slight dark points and a fine pale line at base of cilia. Hind wing ochreous white suffused with brown towards termen; the underside with the costal and terminal areas slightly irrorated with brown, a dark discoidal spot.

Hab. Amurland; Japan, Yezo, Hakodate (*Pryer*), 2 ♂. *Exp.* 40 millim.

Genus PERIGONICA.

Type.

Perigonica, Smith, Ent. Am. vi. p. 123 (1890) ..... *angulata.*

Proboscis fully developed; palpi short, porrect, fringed with hair; frons smooth, with small corneous plate below it; eyes large, rounded; head and thorax clothed with long fine hair, a ridge-like dorsal crest; tibiæ fringed with hair; abdomen with dorsal crest on 1st segment and lateral tufts of hair. Fore wing with the apex somewhat produced and acute, the termen excised below it; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastoming with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. 1. Antennæ of male bipectinate, with moderate branches.

A. Fore wing slightly irrorated with fuscous..... *fulminans.*
B. Fore wing thickly irrorated with fuscous ..... *tertia.*

1772. Perigonica fulminans.

Perigonica fulminans, Smith, Ent. Am. vi. p. 124 (1890); id. Cat. Noct. N. Am. p. 209.

Head and thorax clothed with pale rufous hair; palpi irrorated with black; frons black at sides; pectus black and white in front; legs whitish irrorated with black; abdomen white irrorated with black, the anal tuft tinged with ochreous. Fore wing pale rufous, the markings hardly visible or quite obsolete; subbasal line fuscous, double; antemedial line single, curved; orbicular moderate, with very faint pale annulus; reniform narrow, constricted at middle,

with pale annulus, the lower part darkened by the medial shade, which is oblique from costa to lower angle of cell; postmedial line double, the outer line reduced to points on the veins, bent outwards below costa, excurved to vein 4, then incurved; subterminal

Fig. 117.—*Perigonica fulminans*, ♂. ½.

line distinct, whitish, incurved below vein 4. Hind wing white, slightly tinged with rufous on marginal areas; the underside with the marginal areas irrorated with dark brown, a black discoidal point.

Hab. U.S.A., Colorado, 1 ♂, Arizona, Prescott (*Oslar*), 1 ♂, 1 ♀. *Exp.* 42 millim.

1773. Perigonica tertia. (Plate XC. fig. 30.)

Perigonica tertia, Dyar, Cat. Lep. N. Am. p. 168 (1902); id. Proc. Ent. Soc. Wash. v. p. 294 (1903).

Head and thorax pale rufous, some of the hairs tipped with black; abdomen pale rufous irrorated with black. Fore wing pale rufous, prominently irrorated with black; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line double, rather irregularly waved and somewhat oblique; orbicular and reniform with ill-defined pale annuli, the former small, round, the latter rather constricted at middle and with some fuscous in its lower part; a more or less distinct medial shade oblique from costa to median nervure, where it is angled; postmedial line slightly waved, bent outwards below costa, somewhat incurved at discal fold and strongly below vein 4, a double series of points on the veins beyond it; subterminal line indistinct, pale, defined on inner side by a series of lunulate fuscous marks, becoming somewhat dentate at middle, angled outwards at vein 7 and excurved at middle; a prominent terminal series of black points. Hind wing white, with a pinkish tinge and irrorated with brown, especially on terminal area; traces of a diffused subterminal band; the underside with black discoidal lunule, traces of postmedial series of points, and some points on termen.

Hab. U.S.A., Oregon, Portland, California (*Walsingham*), 1 ♀. Arizona, Prescott (*Oslar*), 1 ♂, 1 ♀. *Exp.* 44 millim.

Sect. II. Antennæ of male serrate and fasciculate.

*1774. Perigonica angulata.

Perigonica angulata, Smith, Ent. Am. vi. p. 124 (1890); id. Cat. Noct. N. Am. p. 209.

♂. Head and thorax pale rufous slightly irrorated with black; antennæ blackish; frons black; pectus and legs whitish irrorated with black; abdomen ochreous irrorated with black, the ventral surface whiter. Fore wing ochreous with a rufous tinge and sparsely irrorated with black; antemedial line represented by a black point on costa; medial line fairly distinct on costal area, then almost obsolete, oblique from costa to lower angle of cell; reniform indistinct, with slight fuscous centre and pale annulus; postmedial line indistinct, slightly bent outwards below costa,

Fig. 118.—*Perigonica angulata*, ♂. ½.

oblique to vein 6, then somewhat dentate, with points at the veins and series of points beyond it, incurved below vein 4; subterminal line very faint, pale, minutely waved, angled outwards at vein 7 and excurved at middle, a slight fuscous shade before it on costa; terminal series of slight points. Hind wing ochreous white with a slight pink tinge; the marginal areas irrorated with brown; a terminal series of black points on apical half; the underside irrorated with black, a small discoidal spot and slight postmedial series on the veins.

Hab. U.S.A., California, Sierra Nevada, in Coll. Schaus. *Exp.* 38 millim.

Genus SIDERIDIS.

	Type.
Sideridis, Hübn. Verz. p. 232 (1827)	*evidens.*
Aletia, Hübn. Verz. p. 239 (1827)	*vitellina.*
Hyphilare, Hübn. Verz. p. 239 (1827)	*albipuncta.*
Crocigrapha, Grote, Can. Ent. vii. p. 57 (1875)	*normani.*

Proboscis fully developed; palpi short, obliquely upturned, the 2nd joint fringed with long hair in front, the 3rd minute; frons smooth; eyes large, rounded; antennæ of male typically minutely ciliated; head and thorax clothed with hair only, except a few scales on upper edge of patagia; the prothorax with spreading crest; tibiæ fringed with hair; abdomen with dorsal crest on 1st segment only. Fore wing with the apex rectangular, the termen oblique towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

Sect. I. Antennæ of male bipectinate, with short branches to near apex.

1775. Sideridis limbata.

Apamea limbata, Butl. A.M. N. H. (5) iv. p. 360 (1879).

Head and thorax grey tinged with brown, the crests on thorax tipped with black; tarsi banded with black; abdomen brownish grey irrorated with black. Fore wing ochreous white striated with brown and irrorated with black, the areas between subbasal and antemedial lines down to submedian fold and between postmedial and subterminal lines except towards inner margin suffused with black; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, angled outwards below cell; claviform

Fig. 119.—*Sideridis limbata*, ♂. ½.

small, incompletely defined by black; orbicular and reniform defined by black, the former small, irregularly rounded, the latter rather constricted at middle; an oblique fuscous striga from costa to reniform; postmedial line minutely dentate, excurved from costa to vein 4, then incurved; subterminal line only defined by the contrast between the dark and pale areas, angled outwards at discal fold and incurved above and below those points; a terminal series of black points; cilia rufous with black tips. Hind wing ochreous white tinged with brown, the inner and terminal areas suffused with fuscous brown; the underside whitish irrorated with brown, a dark discoidal lunule and sinuous postmedial line with short black streaks on the veins showing through to upperside.

Hab. Japan, Kiushiu, 1 ♂, Yokohama (*Pryer*), 1 ♂, 4 ♀, type.
Exp. 44 millim.

Sect. II. Antennæ of male ciliated.

A. (*Hyphilare*). Abdomen of male with paired ventral tufts of long hair from base; the wing suffused with silvery scales on underside.

a. Frontal tuft of male enlarged and hollowed out over the palpi; tufts of yellow scales below and between tegulæ.

1776. Sideridis lithargyria.

Noctua lithargyria, Esp. Schmett. iv. pl. 124. f. 6 (1788); Hübn. Eur. Schmett., Noct. f. 225; Dup. Lép. Fr. vii. p. 100, pl. 107. f. 1; Steph. Ill. Brit. Ent., Haust. ii. p. 151; Staud. Cat. Lep. pal. p. 193.

Mythimna grisea, Steph. Ill. Brit. Ent., Haust. ii. p. 150 (1829).
Leucania anargyria, Boisd. Ind. Meth. p. 132 (1840).
Leucania argyritis, Ramb. Cat. Lep. S. And. pl. 8. f. 2 (1858).

Head and thorax purplish pink; abdomen pinkish, paler at base, the ventral tufts of male black. Fore wing purplish red, the costal and inner areas rather paler and irrorated with red; antemedial line indistinct, oblique, waved; a slight pale discoidal lunule conjoined to a prominent small white spot at lower angle of cell; postmedial line indistinct, somewhat dentate and produced to a

Fig. 120.—*Sideridis lithargyria*, ♂. ½.

series of black points on the veins, bent outwards below costa, excurved to vein 4, then incurved. Hind wing pale reddish suffused with fuscous; the cilia pale reddish, with a deep red line through them. Underside suffused with silvery scales in male except costal area of fore wing; of female pale pinkish irrorated with brown, the cell of fore wing suffused with fuscous.

Ab. 1. *grisea*. Thorax and fore wing greyish and only slightly tinged with red; hind wing paler.

Hab. Britain, Scotland, Leech Coll., England, Leech Coll.; France, Cevennes (*A. H. Jones*); Germany, Zeller, Frey, and Leech Colls.; Switzerland, Frey Coll.; Spain, Canales (*Chapman*); Italy; Sicily; Dalmatia; Armenia; Asia Minor, Lydia, Pontus, Taurus; Syria, 2 ♂, 1 ♀; Persia; W. Turkestan, Issyk-Kul; Tibet, Kuku-noor. *Exp.* 40–44 millim.

Larva. Meyr. Brit. Lep. p. 68; Barrett, Lep. Brit. v. p. 176, pl. 205. f. 3.

Pinkish ochreous; dorsal line white edged with black; subdorsal line whitish, edged above with deep fuscous; supraspiracular line sometimes paler. Food-plants, Grasses. 9–5.

b. Frontal tuft of male not enlarged and overhanging the palpi; no tufts of yellow hair below and between tegulæ.

1777. Sideridis albipuncta.

Noctua albipuncta, Schiff. Wien. Verz. p. 84 (1776); Fabr. Mant. Ins. ii. p. 178 (1787); Hübn. Eur. Schmett., Noct. f. 223; Staud. Cat. Lep. pal. p. 193.
Leucania italo-gallica, Mill. Cat. Alp. Marit. ii. Suppl. p. 21 (1872).
Leucania flecki, Carad. Iris, ix. p. 31 (1896).

Head and thorax bright rufous; tegulæ with slight dark medial

line; abdomen ochreous more or less tinged with brown, the ventral tufts of hair of male black. Fore wing purplish rufous with slightly darker irroration; the costal edge whitish; an indistinct oblique waved antemedial line; a small white spot at lower angle of cell; postmedial line indistinct, somewhat dentate and produced to black points on the veins, bent outwards below costa and oblique below vein 4; subterminal line indistinct, arising from termen below apex, angled inwards in discal and submedian folds

Fig. 121.—*Sideridis albipuncta*, ♂. ½.

and excurved between those points, the area beyond it somewhat darker. Hind wing ochreous, more or less strongly suffused with fuscous brown. Underside of male whitish, suffused with silvery scales except costal area of fore wing; of female pale, tinged with purplish red especially towards costa and termen and irrorated with brown.

Ab. 1. *italo-gallica*. Darker dull brown.

Ab. 2. *flecci*. Fore wing dull grey-brown; hind wing fuscous.

Hab. Britain, S.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Spain; Italy; Rumelia; Armenia; Asia Minor, Bithynia, Pontus; Persia. *Exp.* 36 millim.

Larva. Meyr. Brit. Lep. p. 68; Barrett, Lep. Brit. v. p. 173, pl. 205. f. 2.

Pale greyish ochreous freckled with brownish; dorsal line pale, brown-edged; subdorsal line pale, edged above with blackish, below with brown; lateral line pale; spiracular line whitish; head ochreous reticulated with brown. Food-plants, Grasses. 11–8.

B. (*Sideridis*). Abdomen of male without paired ventral tufts of long hair from base.

a. Fore wing yellow suffused slightly with rufous ..... *vitellina*.
b. Fore wing greyish suffused with rufous.
a^1. Fore wing not striated with rufous.
a^2. Thorax deep rufous ..... *rosea*.
b^2. Thorax pale rufous ..... *cedens*.
b^1. Fore wing striated with rufous ..... *normani*.
c. Fore wing deep rufous ..... *conformana*.
d. Fore wing deep purple-red ..... *rubefacta*.
e. Fore wing blue-grey irrorated with fuscous ..... *cæsia*.
f. Fore wing white with a violaceous tinge ..... *eximia*.

1778. Sideridis vitellina.

Noctua vitellina, Hübn. Eur. Schmett., Noct. ff. 379, 589 (1827); Dup. Lép. Fr. vii. p. 475, pl. 130. f. 4; Staud. Cat. Lep. pal. p. 193.

Head, thorax, and abdomen yellow tinged with rufous. Fore wing yellow irrorated with rufous; indistinct oblique rufous streaks above and below vein 1 before the antemedial line, which is dentate, oblique from costa to submedian fold, then angled inwards on vein 1; orbicular a small rufous spot; reniform a rufous lunule; postmedial line somewhat dentate and with minute dark streaks on the veins, slightly incurved to costa and in discal fold, oblique below vein 4; subterminal line minutely waved, angled outwards at vein 7 and slightly excurved at middle. Hind wing semihyaline white, the veins and terminal area tinged with ochreous; the underside with the costal area slightly irrorated with rufous.

Hab. Britain; France, Sand Coll.; Germany, Zeller and Frey Colls.; Hungary, Frey Coll.; Italy, Capri (*C. Browne*); Sicily, Zeller Coll.; Dalmatia, Leech Coll.; Algiers; Canaries, Leech Coll., (*W. White*) 1 ♂; Syria, Leech Coll.; W. Turkestan, Ferghana, Issyk-Kul; Kashmir, Scind Valley (*Leech*), 1 ♀, Nubra (*McArthur*), 1 ♀, Rala (*McArthur*), 1 ♀, Narkundah (*McArthur*), 1 ♂, 1 ♀; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂. *Exp.* 40–44 millim.

Larva. Meyr. Brit. Lep. p. 69; Barrett, Lep. Brit. v. p. 168, pl. 204. f. 3.

Pale reddish brown; dorsal, subdorsal, and lateral whitish lines edged with brown; spiracular line pale; head reddish brown reticulated with black. Food-plants, Grasses. 10–5.

1779. Sideridis rosea. (Plate XC. fig. 31.)

Mamestra rosea, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 119 (1874); Smith, Cat. Noct. N. Am. p. 120.

Head and thorax deep rufous; abdomen pale rufous with the dorsal crest deep rufous. Fore wing whitish, tinged with pale red and irrorated with deep red; a curved subbasal line from costa to vein 1; an oblique waved antemedial line; claviform large, defined by red; orbicular and reniform large, defined by red, the former round, the latter greyish, its centre defined by fuscous and with fuscous patch in its lower part; a sinuous medial shade, oblique from costa to lower angle of cell; postmedial line dentate, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line grey defined by deep rufous suffusion on inner side, sinuous, angled outwards at vein 7 and excurved at middle. Hind wing whitish, the costal and terminal areas tinged with yellow and more or less irrorated with red; the veins reddish; a diffused fuscous subterminal band sometimes present; the underside with indistinct curved postmedial line.

Hab. Canada; U.S.A., Maine, 1 ♂ type, Massachusetts (*Newton*), 1 ♀, New York (*Bailey*), 1 ♂, 2 ♀, Oregon, Colorado (*Bruce*), 1 ♂. *Exp.* 42–52 millim.

1780. Sideridis evidens.

Noctua evidens, Hübn. Eur. Schmett., Noct. f. 369 (1827); Dup. Lép. Fr. vii. p. 457, pl. 128. f. 6, & Suppl. iii. pl. 39. f. 2; Staud. Cat. Lep. pal. p. 193.

Head and thorax bright rufous; abdomen yellowish tinged with rufous. Fore wing rufous suffused with whitish, the veins rufous; subbasal line rufous, angled outwards below costa and on median nervure, from costa to submedian fold; antemedial line oblique, waved; claviform moderate, defined by rufous; orbicular and reniform defined by rufous, the former round; a slightly waved medial shade, oblique from costa to median nervure; postmedial line minutely waved, bent outwards below costa, excurved to vein 4, then oblique; subterminal line formed by somewhat dentate rufous marks, diffused on inner side towards costa, slightly angled outwards at vein 7 and excurved at middle; a fine waved terminal line. Hind wing ochreous suffused with rufous, a diffused fuscous subterminal band; the underside paler, the costal and terminal areas irrorated with purplish red, a small discoidal spot and curved postmedial line.

Hab. Germany, Bohemia, Leech Coll.; Austria, Leech Coll.; Hungary, Zeller, Frey, and Leech Colls.; Russia, Crimea, Urals; W. Siberia, Altai. *Exp.* 36 millim.

1781. Sideridis normani.

Perigrapha normani, Grote, Can. Ent. vi. p. 115 (1874); id. Can. Ent. vii. p. 227, pl. i. f. 13; Smith, Cat. Noct. N. Am. p. 201.

Head and thorax red-brown, the hairs tipped with grey; sides of palpi and frons blackish; patagia with a few large black scales on upper edge; abdomen ochreous whitish slightly irrorated with

Fig. 122.—*Sideridis normani*, ♂. ½.

black. Fore wing rufous sparsely irrorated with black, the inner and postmedial areas more or less greyish with rufous striation; subbasal line indistinct, dark defined by grey on outer side, from costa to submedian fold; antemedial line defined by grey on inner side, oblique and slightly curved; orbicular and reniform large, with grey annuli, the former rounded, the latter with some fuscous in its lower part; postmedial line slightly defined by grey on outer side, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line very indistinct,

angled outwards at vein 7 and excurved at middle, a grey patch beyond it at apex; a terminal series of black points. Hind wing semihyaline white with slight brown irroration; the veins tinged with brown; the terminal area suffused with brown; the underside with the costal and terminal areas irrorated with brown, a discoidal spot and postmedial series of points on the veins.

Hab. Canada, 1 ♂ type, (*Norman*) 1 ♂; U.S.A., N. and E. States, New York, Evan's Centre (*Bailey*), 3 ♀. *Exp.* 40 millim.

1782. **Sideridis congermana.** (Plate XC. fig. 32.)

Hadena congermana, Morr. Can. Ent. vi. p. 106 (1874); Smith, Cat. Noct. N. Am. p. 120.

♀. Head and thorax deep purplish rufous, the latter with yellower dorsal stripe; abdomen yellowish tinged with rufous, deep rufous below. Fore wing deep purplish rufous, the veins fuscous; a waved yellowish subbasal line from costa to submedian fold; antemedial line oblique, waved, yellowish; claviform obsolete; orbicular a small whitish annulus with brown centre; reniform large, with fuscous centre with some white on it and white annulus somewhat broken up into spots; postmedial line represented by a series of white points on the veins and yellowish strigæ on costa and inner margin, bent outwards below costa, excurved to vein 4, then oblique, some yellowish points on costa beyond it; subterminal line yellowish, angled outwards at vein 7 and dentate on veins 4, 3, the area beyond it paler and yellower; cilia intersected with fuscous. Hind wing whitish, suffused with fuscous brown especially on terminal area, the termen red; the cilia yellow with a red line through them; the underside with the costal and terminal areas suffused and irrorated with red, a dark discoidal lunule and sinuous postmedial line.

Hab. U.S.A., N.E. and Middle States (*Morrison*), 1 ♀ type, New York, Albany (*Bailey*), 2 ♀, Colorado. *Exp.* 40 millim.

1783. **Sideridis rubefacta.** (Plate XCI. fig. 1.)

Ceramica rubefacta, Morr. Can. Ent. vi. p. 249 (1874); Smith, Cat. Noct. N. Am. p. 120.
Mamestra vindemialis, Grote, Can. Ent. xii. p. 185 (1880), nec Guen.

Head and thorax deep purplish red-brown, the latter with yellowish dorsal stripe; abdomen purplish red, greyish at base, the anal tuft ochreous. Fore wing deep purplish red, sometimes suffused with fuscous, the costal area slightly irrorated with white; traces of a waved subbasal line from costa to submedian fold; an indistinct oblique waved antemedial line; claviform obsolete; orbicular and reniform with a few grey scales at centre and very indistinct dark outlines, the former small; an indistinct dentate postmedial line, bent outwards below costa, excurved to vein 4, then oblique, some whitish points beyond it on costa; subterminal line represented by some whitish scales with a brownish tinge before them, angled outwards at vein 7 and excurved at middle. Hind wing yellowish

white, more or less strongly tinged with brown, especially on terminal area, the termen slightly tinged with rufous ; the underside with the costal and terminal areas irrorated and suffused with red, traces of a curved postmedial line.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 1 ♀; U.S.A., N.E. and Middle States, New York, Albany (*Bailey*), 2 ♂, 3 ♀, type *vindemialis*, Grote. *Exp.* 42 millim. This may be a variety of *congermana*.

Larva. Head brown, reticulate and banded with darker brown. Body sordid pale brown, finely and densely dusted with brown-black, leaving a distinct dorsal and broad paler substigmatal band of the ground-colour. Cervical shield shining brown, a central pale yellow line, the lateral corners luteous. Feet coloured like the body.—H. G. D.

1784. Sideridis cæsia.

Noctua cæsia, Schiff. Wien. Verz. p. 82 (1776); Bork. Eur. Schmett. iv. p. 279 (1792); Hübn. Eur. Schmett., Noct. f. 60; Dup. Lép. Fr. vi. p. 415, pl. 98. f. 6; Staud. Cat. Lep. pal. p. 162.
Noctua dichroma, Esp. Schmett. iv. p. 519, pl. 155. f. 2 (1790).
Dianthœcia mananii, Gregson, Entom. iii. p. 103 (1866).
Dianthœcia doubledayi, Mill. Nat. Sic. vi. p. 2 (1886).
Dianthœcia nigrescens, Staud. Cat. Lep. pal. p. 162 (1902).
Dianthœcia clara, Staud. Cat. Lep. pal. p. 162 (1902).

Head and thorax bluish grey mixed with fuscous ; tarsi black with whitish rings ; abdomen grey-brown. Fore wing blue-grey thickly irrorated with fuscous, the ante- and postmedial areas suffused with fuscous ; the discal and submedian folds suffused with fulvous yellow ; subbasal line waved, from costa to submedian fold ; antemedial line oblique, waved, defined by whitish on inner side ; claviform absent ; orbicular and reniform with indistinct yellow annuli, the former rounded ; an indistinct curved medial line, waved on inner area ; postmedial line dentate and produced to grey points on the veins, bent outwards below costa and incurved below vein 4, some pale points beyond it on costa ; subterminal line whitish, with more or less distinct dentate yellowish marks on inner side, angled outwards at vein 7 and obscurely dentate at veins 4 and 3 ; cilia chequered ochreous whitish and fuscous. Hind wing fuscous brown, rather paler on basal and inner areas ; the cilia whitish, with a dark line near base ; the underside grey irrorated with brown, a curved postmedial line, the area beyond it suffused with fuscous.

Ab. 1. *manani*. Much darker, and the fore wing more uniform in colour.—Isle of Man.

Ab. 2. *nigrescens*. Much darker; fore wing suffused with black. —Higher Pyrenees, Alps, and Scandinavian mountains.

Ab. 3. *clara*. Fore wing greyer, slightly irrorated with pinkish ; the medial area whitish.—Armenia, Asia Minor.

Hab. Britain, Isle of Man (*Doubleday*), Leech Coll., Ireland ; France, Pyrenees, Gavarnie (*Mrs. Nicholl*); Austria, Zeller Coll. ; Hungary ; Switzerland, Zeller and Frey Colls. ; Spain, Granada ;

Italy; Scandinavia, Dovrefjeld; Armenia; Asia Minor, Pontus, Taurus. *Exp.* 40–44 millim.

Larva. Meyr. Brit. Lep. p. 78; Barrett, Lep. Brit. iv. p. 256, pl. 165. f. 1.

Pale brownish ochreous irrorated with brown; a dorsal series of darker V-shaped marks, indistinct on thoracic somites; subdorsal line darker; head brown with dark markings. Food-plants: seed-capsules of *Silene inflata* and *S. maritima*. 7–8.

1785. Sideridis eximia.

Dianthœcia eximia, Staud. Iris, viii. p. 319, pl. 6. f. 7 (1895); id. Cat. Lep. pal. p. 161.

♂. Head and thorax white with some brown hair; palpi pale red-brown; frons with brown bar above; tegulæ with diffused brown medial line; abdomen pale yellow-brown mixed with grey. Fore wing white, with a slight violaceous tinge and irrorated with brown; subbasal line represented by a black striga from costa and a curved black mark below the cell, retracted to base and followed by a prominent triangular spot; antemedial line double, the outer strong, curved and slightly waved, with slight brown shading on inner side and more prominent shading on outer; claviform brown, with its extremity defined by black; orbicular and reniform large, white with brown centres and defined by brown, the former oblique elliptical; medial line oblique from costa to below cell, then dentate and inwardly oblique, the area between it and postmedial line suffused with brown; postmedial line double, very slightly waved, bent outwards below costa, excurved to vein 4, then very oblique, the area beyond it tinged with brown to the subterminal line, which has minute dentate black marks before it below costa and at middle, is excurved between veins 7 and 2, and defined by white on outer side; cilia pale brown. Hind wing pale, suffused with fuscous especially towards termen and with an ochreous tinge at base; cilia pale brown, white at tips; the underside pale thickly irrorated with brown, a slight discoidal lunule, curved postmedial line, and traces of subterminal band.

Hab. Tibet, Kuku-noor, 1 ♂, Amdo; Punjab, Kulu (*Dudgeon*), 1 ♂. *Exp.* 34 millim.

Genus PHYSETICA.

	Type.
Physetica, Meyr. Trans. N.Z. Inst. xix. p. 5 (1887)	*cærulea.*

Proboscis fully developed; palpi oblique, fringed with hair in front, the 3rd joint greatly dilated in male, with a small orifice on outer side near extremity; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair only and without crests; fore tarsi with long curved claw on outer side of 1st joint; pectus clothed with long hair; abdomen with dorsal crest on basal segment. Fore wing with the apex somewhat produced and the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing blue-grey ..... *cærulea.*
B. Fore wing purplish red, the hind wing purplish pink ..... *vindemialis.*
C. Fore wing rufous, the hind wing reddish ochreous ..... *micrasta.*

1786. Physetica cærulea.

Agrotis cærulea, Guen. Ent. Mo. Mag. v. p. 38 (1868); Hudson, New Zealand Moths & Butterflies, p. 8, pl. iv. f. 7.

♂. Head and thorax blue-grey irrorated with whitish; palpi below, pectus, legs, and abdomen ochreous yellow, the dorsal crest grey. Fore wing blue-grey irrorated with whitish; subbasal line indistinct, waved, from costa to submedian fold; antemedial line indistinct, double, oblique from costa to submedian fold, then angled inwards on vein 1; faint traces of orbicular and reniform stigmata defined by white; an indistinct medial shade; postmedial line

Fig. 123.—*Physetica cærulea*, ♂. ½.

indistinct, double, dentate and produced to white points on the veins, bent outwards below costa, excurved to vein 4, then incurved; traces of a whitish subterminal line slightly defined by fuscous on inner side, angled outwards at vein 7 and excurved at middle. Hind wing fuscous, the basal and inner areas yellowish; underside yellowish white.

♀. With less of the yellow tinge.

Hab. New Zealand, (*J. J. Walker*) 1 ♂, 1 ♀, Marlborough (*Skellon*, *Marsden*, *Mathew*), 2 ♂, 1 ♀, N. Island, Wellington, S. Island, Blenheim, Rakaia. *Exp.* 44 millim.

1787. Physetica vindemialis. (Plate XCI. fig. 2.)

Ceramica vindemialis, Guen. Noct. i. p. 344 (1852); Smith, Cat. Noct. N. Am. p. 205.

♀. Head and thorax purple-red, the hairs slightly tipped with grey (abdomen wanting). Fore wing purple-red, very slightly irrorated with grey; subbasal line obsolete; faint traces of a curved greyish antemedial line; orbicular obsolete; reniform represented by traces of a discoidal lunule and fuscous spot at lower angle of cell; traces of a dentate postmedial line, bent outwards below costa, excurved to vein 4, then incurved; faint traces of a subterminal line. Hind wing purplish pink, the cilia pale; the underside white thickly irrorated with purplish pink.

Fore tarsi with long curved claws on outer side of 1st three joints, the claws at extremity of joints stout.

Hab. ? U.S.A., E. Florida (*Doubleday*), 1 ♀ type. *Exp.* 42 millim.

The type has the abdomen of a male of some other species stuck onto it, and will probably prove to be from New Zealand.

*1788. **Physetica micrasta.** (Plate XCI. fig. 3.)

Leucania micrasta, Meyr. Trans. Ent. Soc. 1897, p. 383; Hudson, New Zealand Moths & Butterflies, p. 12, pl. iv. f. 10.

♀. Head and thorax bright rufous, the hairs tipped with white; abdomen pale rufous. Fore wing bright rufous; the costal area slightly irrorated with whitish; the veins slightly streaked with fuscous and irrorated with white; an antemedial fuscous point on vein 1, defined by white points on each side of it; a fuscous point at lower angle of cell with white point on each side of it; a curved postmedial series of slight fuscous points defined by white points. Hind wing reddish ochreous suffused with brown; cilia ochreous with a brown line through them; the underside whitish tinged and irrorated with rufous.

Hab. New Zealand, Wellington, type † in Coll. Meyrick, Karori. *Exp.* 46 millim.

Genus **CERAMICA.**

Type.

Ceramica, Guen. Noct. i. p. 343 (1852) ..... *picta.*

Proboscis fully developed; palpi short, obliquely upturned, the 2nd joint fringed with hair, the 3rd short; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with rough hair only and without distinct crests; tibiæ fringed with hair on outer side; abdomen with dorsal crest on basal segment and slight lateral tufts of hair towards extremity. Fore wing with the apex produced and acute; veins 3 and 5 from near angle of cell, 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

1789. **Ceramica picta.**

Mamestra picta, Harr. Rep. Ins. Mass. p. 329 (1841); Riley, 2nd Rep. Ins. Mo. p. 112, f. 82; Smith, Cat. Noct. N. Am. p. 120.
Ceramica exusta, Guen. Noct. i. p. 344 (1852).
Mythimna contraria, Wlk. ix. 78 (1856).

Head and thorax dark chocolate-brown, some of the hairs tipped with white, especially on dorsal ridge; pectus brown and grey; abdomen grey-brown, the extremity and ventral surface tinged with purplish. Fore wing purplish red, suffused with deep purple-brown, especially on costal half and terminal area, the costal half irrorated with white to just below cell; claviform a small dark mark, sometimes with white scales at centre and with a diffused yellowish streak beyond it; orbicular a small indistinct whitish annulus; reniform rather indistinct, fuscous with whitish centre

and annulus, somewhat angled inwards on median nervure, and with a diffused yellowish streak beyond it; traces of a whitish subterminal line angled outwards at vein 7 and excurved at middle. Hind wing almost pure white, the veins tinged with brown; the

Fig. 124.—*Ceramica picta*, ♂. ½.

cilia reddish brown on apical half; the underside with small brown discoidal spot, the costal area irrorated with rufous extending on termen to vein 3.

Hab. Canada (*Norman*), 1 ♀; U.S.A., E. States, 6 ♂, 1 ♀ type and type *contraria*, Massachusetts, Cambridge (*Boll*), 1 ♂, New York, New Jersey, Wisconsin, Virginia, Nebraska, Colorado. *Exp.*, ♂ 36, ♀ 40 millim.

Larva. Head dark red. Body black, with broad yellow subdorsal and stigmatal bands, the dorsal space dotted with yellow, lateral space crossed by fine vertical yellow lines, slightly reticulated; subventral area with irregular yellow lines in a broken reticulation. Feet and venter dark red.—H. G. D.

Genus **BRITHYS**.

	Type.
Brithys, Hübn. Verz. p. 226 (1827)	*encausta.*
Cocytia, Treit. Schmett. Eur. x. 2, p. 29 (1834), nec Boisd. Lép. (1829)	*pancratii.*
Glottula, Guen. Ann. Soc. Ent. Fr. vi. p. 359 (1837)	*pancratii.*

Proboscis weak; palpi obliquely porrect, thickly scaled; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed chiefly with scales and without distinct crests; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell or shortly stalked; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the ground-colour reddish brown.
  a. Fore wing with the basal area brown suffused with fuscous. *pancrati.*
  b. Fore wing with the basal area silky leaden grey ..... *crimi.*
B. Fore wing white tinged with flesh-colour ..... *encausta.*

1790. Brithys pancratii.

Noctua pancratii, Cyr. Ent. Nap. pl. 12. f. 4 (1787); Hübn. Eur. Schmett., Noct. f. 391; Godt. Lép. Fr. v. p. 262, pl. 70. ff. 1, 2; Mill. Icones, pl. 54. ff. 6, 9; Staud. Cat. Lep. pal. p. 154.

Head and thorax dark brown or blackish; tarsi ringed with

white; abdomen white, dorsally tinged with brown or black at base and extremity, the ventral surface brown. Fore wing reddish brown, the basal and costal areas suffused with fuscous brown or blackish; subbasal line represented by some black scales below costa and cell; antemedial line indistinct, waved, interrupted, oblique towards costa; claviform small, indistinctly defined by black; orbicular absent; reniform narrow, with rufous centre and whitish annulus; postmedial line rather ill-defined, minutely dentate and produced to short streaks on the veins, bent outwards below costa, excurved to vein 6, then oblique, some pale points beyond it on costa, the area beyond it more or less distinctly paler, except towards costa before the subterminal line, which is formed of a series of indistinct pale spots defined on inner side by somewhat dentate rufous marks, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing pure white, the costal area tinged with fuscous and in female the terminal area to vein 2.

Hab. S. France, Zeller and Leech Colls.; Portugal; Italy, Frey Coll.; Algeria, Leech Coll.; Nigeria, Sapele (*Sampson*), 1 ♀; Mashonaland, Salisbury (*Marshall*), 1 ♀; Natal, Durban (*Leigh*), 1 ♀; Cape Colony, Grahamstown, 1 ♀; Mauritius, Curepipe (*Tulloch*), 1 ♂, 1 ♀. *Exp.* 38–46 millim.

Larva. Head, front of 1st somite, and legs yellow; the rest brown, with dorsal and subdorsal series of yellowish-white spots, small at anterior edges of somites and large at posterior edges; a subdorsal series of white points on middle of abdominal somites; broad lateral and ventral yellowish-white bands, each on part of two somites; warts brown, each with one hair, wart vi. on somites 5 to 9 placed on white spots. Foot-plants: *Liliaceæ*.

1791. Brithys crini.

Noctua crini, Fabr. Syst. Ent. p. 587 (1775).
Noctua dominica, Cram. Pap. Exot. iv. p. 238, pl. 399. f. H (1782); Moore, Lep. Ceyl. iii. p. 14, pl. 145. ff. 2, 2 *a*; Hmpsn. Moths Ind. ii. p. 167.

Head and thorax blackish; tarsi ringed with white; abdomen whitish, more or less strongly tinged with fuscous, the ventral surface fuscous. Fore wing dark leaden grey; the subbasal line represented by a black striga below costa; the antemedial line irregularly waved, oblique towards costa, then closely approximated to the reniform; claviform and orbicular absent; reniform small, greyish with rufous annulus; postmedial line somewhat dentate and produced to short streaks on the veins, bent outwards below costa, and below vein 3 bent inwards to lower edge of reniform, then approximated to antemedial line, some pale points beyond it on costa; subterminal line represented by a series of pale spots defined on inner side by a series of somewhat dentate rufous marks,

the area before it pale rufous except towards costa, angled outwards at vein 7 and excurved at middle; a terminal series of small black

Fig. 125.—*Brithys crini*, ♂. ½. (From Moths Ind. vol. ii.)

lunules. Hind wing pure white, the costal area tinged with fuscous and in female the terminal area also.

Hab. Punjab, Allahabad; Ceylon (*Templeton*), 2 ♂, 1 ♀, Trincomalee (*Yerbury*), 1 ♂; Burma, Moulmein (*Clerk*), 1 ♀; Singapore (*Ridley*), 1 ♀; Java (*Horsfield*), 5 ♂, 3 ♀. *Exp.* 32–46 millim.

Larva. Head, first and last somite, and legs yellow; the rest brown, with dorsal and subdorsal series of yellowish-white spots, those on posterior edge of somites rather smaller; somite 4 without anterior spots and 5 with the dorsal spot only; subdorsal white points on somites 4 to 8; lateral and ventral bands each on part of two somites; wart vi. on somites 4–8 on white spots. Food-plants, *Liliaceæ*.

1792. Brithys encausta.

Noctua encausta, Hübn. Samml. Eur. Schmett., Noct. f. 392 (1827); Dup. Lép. Fr. vi. p. 78, pl. 86. f. 3; Herr.-Schäff. Eur. Schmett., Noct. f. 291; Staud. Cat. Lep. pal. p. 154.

Head and thorax flesh-white; tegulæ with black medial line; prothorax with black patch; abdomen white, flesh-coloured below. Fore wing white tinged with flesh-colour, leaving the costal area from before middle whiter; antemedial line indistinct, waved, often nearly obsolete, oblique from costa to below cell; claviform sometimes slightly defined by black; orbicular represented by a black streak, or obsolete; reniform narrow, defined by black; postmedial line dentate and produced to black points on the veins, bent outwards below costa and incurved below vein 4; subterminal line fuscous, obsolete towards costa, the area before it yellowish except towards costa, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules. Hind wing pure white; female with the costal area tinged with fuscous, a dark terminal line except towards tornus; the underside sometimes with sinuous postmedial line on costal half of wing.

Hab. Italy, La Spezia; Sicily, Zeller, Frey, and Leech Colls.; Ionian Is.; Greece, 1 ♀. *Exp.* 38–44 millim.

Genus ASPIDIFRONTIA.

Type.

Aspidifrontia, Hmpsn. Ann. S. Afr. Mus. ii. p. 269 (1902)..... *semipallida.*

Proboscis weak; palpi short, oblique, fringed with hair in front; frons with large disk-shaped corneous prominence with raised rim and truncate conical centre; eyes large, round; antennæ of male ciliated; head and thorax clothed with hair and hair-like scales with some scales mixed, without distinct crests; abdomen with dorsal crest at base. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the subterminal line interrupted by dentate white marks on veins 6, 4, 3, 1 ..... *radiata.*
B. Fore wing with the subterminal line not interrupted by dentate white marks.
  a. Fore wing with the area below cell blackish..... *semipallida.*
  b. Fore wing with the area below cell not blackish.
    a^1. Fore wing with the antemedial line dentate.
      a^2. Fore wing with the antemedial line very strongly angled outwards in submedian fold; claviform absent ..... *glaucescens.*
      b^2. Fore wing with the antemedial line moderately angled outwards in submedian fold; claviform present ..... *axylides.*
    b^1. Fore wing with the antemedial line not dentate ..... *rufescens.*

1793. **Aspidifrontia radiata**, n. sp. (Plate XCI. fig. 4.)

Head and thorax pale rufous mixed with black; palpi and frons blackish; abdomen ochreous. Fore wing ochreous, the veins streaked with black; the area below submedian fold suffused with grey, extending to below vein 1 at middle, the lower part of cell and area between veins 4 and 5 suffused with grey; the submedian fold with black streak, another above inner margin; the antemedial line represented by an oblique black striga from submedian fold to vein 1; claviform very elongate and narrow, its upper edge formed by the streaks in submedian fold; orbicular long and lanceolate, ochreous defined by black, placed on a black streak extending to the reniform which is narrow, its upper edge produced and indented, with brown centre with ochreous line in it and ochreous annulus defined by black; faint traces of a dentate postmedial line between veins 5 and 3; subterminal line represented by a series of ochreous points on dentate black marks, longest below costa and at middle; veins 6, 4, 3, 1 defined by dentate whitish marks; cilia chequered fuscous and ochreous. Hind wing ochreous white, the terminal area tinged with fuscous; the underside with the costal area suffused with fuscous.

Hab. Br. E. Africa, Kikuyu (*Crawshay*), 1 ♀ type, Kibauni (*Crawshay*), 4 ♂. *Exp.* 30 millim.

1794. Aspidifrontia semipallida.

Aspidifrontia semipallida, Hmpsn. Ann. S. Afr. Mus. ii. p. 269 (1902).

Head and thorax black; antennæ ochreous white; tarsi ringed with ochreous; abdomen ochreous white, the ventral surface black. Fore wing black suffused with leaden grey, especially towards inner margin; the costal area ochreous white, suffused with purplish pink towards costa and with black patch with three pale points on it on costa before apex, on basal area the pale colour extends to just

Fig. 126.—*Aspidifrontia semipallida*, ♂. ½.

below the cell, on medial area to median nervure, and on postmedial area to vein 5 and includes a black point at lower angle of cell; an oblique dentate postmedial line, obsolete on costal area, with the area beyond it tinged with rufous to the indistinct whitish subterminal line, which is bent outwards to apex and excurved at middle; a terminal series of black and white points. Hind wing yellowish white, the apex slightly tinged with fuscous.

Hab. Mashonaland, Umtali (*Marshall, Dobbie*), 2 ♂, 2 ♀, type. *Exp.* 34 millim.

1795. Aspidifrontia glaucescens, n. sp. (Plate XCI. fig. 5.)

♂. Head and thorax black mixed with grey; tarsi with white rings; abdomen ochreous. Fore wing violaceous grey-white; some red-brown suffusion on basal inner area; the antemedial line black, extremely highly dentate, its teeth running out to middle of wing below costa, in cell, in submedian interspace and above inner margin, and to base below costa and cell, double from median nervure to inner margin; reniform obscurely defined by rufous and with rufous centre; postmedial line double, black, minutely dentate and produced to points on the veins, oblique from costa to discal fold where it is angled, then inwardly oblique; the costa tinged with fuscous towards apex; the subterminal line whitish, defined by rufous on inner side, the area beyond it blackish, rufous at apex; a series of minute white points just before termen; cilia black, with fine white line through them. Hind wing pure white.

Hab. Mashonaland, Salisbury (*Marshall, Dobbie*), 4 ♂, type. *Exp.* 34 millim.

1796. Aspidifrontia axylides. (Plate XCI. fig. 6.)

Hadena axylides, Hmpsn. Journ. Bomb. Soc. Nat. Hist. xiv. p. 198 (1902).

♀. Head and thorax fuscous brown mixed with grey; tarsi with pale rings; abdomen ochreous. Fore wing lilacine grey-white, the costal area beyond antemedial line and the area beyond postmedial line ochreous, the costal and terminal areas suffused with brown except at apex; the basal area below the cell suffused with purple-brown; the subbasal line represented by a black striga from costa; the antemedial line angled outwards below costa and cell and above inner margin, emitting long teeth in cell and on median nervure to near end of cell; claviform small, defined or filled in with brown; orbicular obsolete; reniform narrow, with whitish centre defined by brown and ochreous annulus defined by black on outer side, some dark brown between its lower part and postmedial line, which is double, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line minutely waved, defined by brown on inner side, slightly angled outwards at vein 7 and excurved at middle; a terminal series of pale points; cilia ochreous and brown. Hind wing white.

Hab. Sikhim, 1800 feet (*Dudgeon*), 1 ♀; Madras, Belgaum (*Watson*), 1 ♀ type. *Exp.* 30 millim.

1797. Aspidifrontia rufescens. (Plate XCI. fig. 7.)

Aspidifrontia rufescens, Hmpsn. Ann. S. Afr. Mus. ii. p. 270 (1902).

Head and thorax whitish tinged with purplish pink and brown; palpi and frons blackish; abdomen ochreous white. Fore wing ochreous white thickly irrorated with purplish red; the veins irrorated with black; traces of an antemedial line; a dark point in end of cell; postmedial line represented by an obscure double series of white points on the veins, excurved below costa, then oblique; a terminal series of black points. Hind wing yellowish white, the terminal area suffused with brown; the underside with the costal area tinged with purplish and irrorated with brown.

Frontal process long.

Hab. Mashonaland (*Marshall, Dobbie*), 2 ♂, 3 ♀, Umtali (*Marshall*), 1 ♀ type. *Exp.* 34 millim.

Genus METOPIORA.

	Type.
Metopiora, Meyr. Trans. Ent. Soc. 1902, p. 25	*sanguinata*.

Proboscis minute; palpi oblique, short, slender; frons with large disc-shaped corneous prominence with raised edges and central truncate conical process also with raised edges, a corneous plate below the frons; eyes large, rounded; antennæ of male minutely serrate; head and thorax clothed with hair only and without crests; fore tarsi with the joints very short, the claws large; abdomen without crests. Fore wing with the apex somewhat produced,

the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell or stalked; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cel near base only.

1798. Metopiora sanguinata.

Chariclea sanguinata, Lucas, Proc. Linn. Soc. N. S. W. 1892, p. 254.

♀. Head pink; thorax orange-yellow, tegulæ at extremities and patagia pink; legs mostly pink; abdomen ochreous. Fore wing orange-yellow; a pink fascia from base at vein 1, running below the cell, then rather obliquely to termen at vein 5, narrowing

Fig. 127.—*Metopiora sanguinata*, ♂. ½.

beyond the cell, then expanding at termen; the costal edge pink, expanding into a fascia from beyond middle to apex; cilia pink, expanding into a spot on termen above tornus. Hind wing white

Hab. Queensland, Cape York (*McFarlane*), 1 ♀, Townsville (*Dodd*), 1 ♀. *Exp.* 34 millim.

Genus DIAPHONE.

	Type.
Diaphone, Hübn. Verz. p. 188 (1827)	*eumela*.
Tæniopyga, Wilgrn. Œfv. Vet.-Akad. Förh. xv. p. 212 (1858)...	*eumela*

Proboscis weak; palpi short, porrect, clothed with hair; frons with large rounded prominence with lateral walls and roughened or convoluted centre; eyes large, rounded; antennæ of male serrate and ciliated; head and thorax clothed with hair only and without distinct crests; fore tarsi with the joints short, the ungues large; abdomen with some long hair at base, but without dorsal crest. Fore wing with the apex rounded, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10, anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

1799. Diaphone eumela.

Noctua eumela, Stoll, Pap. Exot. iv. pl. 347. f. G (1781); Kirby, Cat. Lep. Het. p. 909.
Bombyx elegans, Fabr. Mant. Ins. ii. p. 116 (1787).
Noctua sylviana, Stoll, Pap. Exot. v. Suppl. pl. 40. f. 4 (1790).
Chelonia evidens, Guér. Icon. R. Anim., Ins. p. 513, pl. 88. f. 1 (1829).
Diaphone mossambicensis, Hopff. Peters's Reise Moss., Zool. v. p. 431, pl. 28. ff. 6, 7 (1862)
Diaphone angolensis, Weym. Ent. Zeit. Guben, no. 18, p. 67 (1901).

♂. Head blackish; palpi below and at tips, spots on sides of frons,

round base of antennæ, and on back of head orange; thorax grey, the base of tegulæ and patagia white; pro-, meso-, and metathorax with paired yellow spots; pectus and legs black, the latter banded with orange; abdomen fuscous with orange bands, the hair at base grey or whitish. Fore wing grey; the costal area and cell whitish to near apex, before the antemedial line extending to vein 1; the lines strong, black; subbasal and antemedial lines sinuous, the former from costa to vein 1, the latter slightly angled inwards in

Fig. 128.—*Diaphone eumela*, ♂. ½.

cell; claviform and orbicular absent; reniform a crimson lunule, defined by black at sides; postmedial line angled outwards between veins 6 and 5, then incurved, defined by white on outer side; no subterminal line; cilia chequered orange and fuscous. Hind wing pure white, sometimes with curved postmedial line; the underside always with postmedial mark on costa.

♀. Hind wing suffused with fuscous, the base often whitish; cilia chequered fuscous and white; a sinuous postmedial line showing through from underside.

Ab. 1. *mossambicensis*. Antennæ of male strongly serrate; fore wing with the crimson centre of reniform large and rounded.

Hab. C. Africa, Staz Gadda (*Emin Pasha*), 1 ♀; Portuguese E. Africa, Chiperoni (*Kirby*), 1 ♂; Angola; Transvaal, Piet Retief (*Crawshay*), 1 ♀; Natal, Newcastle, 1 ♂, Karkloof (*Marshall*), 1 ♀, Durban (*Gueinzius*, *Leigh*), 1 ♂, 2 ♀; Basutoland, Masite (*Weigall*), 1 ♂; Cape Colony, 3 ♀, Grahamstown, 1 ♂, Brak Kloof (*White*), 1 ♀. *Exp.* 40–52 millim.

Larva. Fawcett, Trans. Zool. Soc. xv. p. 318, pl. 49. ff. 10, 11.

Buff; each somite with a broad dark crimson band except the 1st and 11th, where the band is pale ferruginous with some small black spots. At the final moult the bands become velvety black except on 1st and 11th somites, and the ground-colour is pale greenish. Head, legs, and claspers pale ferruginous. Food-plant, *Ornithogalum ecklони*.

Genus **POLYTELODES**, nov.

Type, *P. florifera*.

Proboscis slender, aborted; palpi oblique, short, clothed with hair; frons with roughened rounded prominence with corneous plate below it; eyes large, rounded; antennæ of male ciliated; head and thorax clothed chiefly with scales and without distinct crests; abdomen with some rough hair at base and without crests. Fore wing with the apex rounded, the termen obliquely

curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle or shortly stalked; 8 anastomosing with the cell near base only.

1800. Polytelodes florifera.

Polytela florifera, Wlk. xv. 1666 (1858).

Head and thorax blue-black; palpi orange, with black bands on 1st and 2nd joints; lower part of frons, patches round base of

Fig. 129. - *Polytelodes florifera*, ♂. ½.

antennæ and on back of head, edges of tegulæ and patagia, and paired spots on pro-, meso-, and metathorax orange; tibiæ and tarsi ringed with orange; abdomen black, with orange dorsal segmental bands except on first segment. Fore wing black suffused with leaden grey; an orange point at base; subbasal line represented by black spots with orange on their outer edges below costa and cell, with an orange spot beyond it below submedian fold and some scales above inner margin; antemedial line black defined by orange on inner side, waved, interrupted; claviform defined by black and orange; orbicular and reniform with orange annuli defined by black, the former round, the latter with pale pink centre open below and with the pink postmedial patch extending into it; postmedial line black, defined by orange on outer side, bent outwards below costa, excurved to vein 5, then strongly incurved to near origin of vein 2, and interrupted by the pink patch which extends to termen from below vein 4 to inner margin, and connected with spots above and below vein 5 with the apical pink patch; some white points on costa towards apex; subterminal line represented by a series of rather ill-defined black spots, slightly angled outwards at vein 7 and incurved below vein 3; a terminal series of small black lunules with some black marks on their inner sides between veins 6 and 2; cilia chequered black and orange. Hind wing fuscous, with white patch in, below, and beyond lower part of cell; a small discoidal spot; cilia orange.

Hab. Sierra Leone (*Foxcroft*), 2 ♂, type; Old Calabar (*Crompton*), 1 ♀; Gold Coast, Accra (*Sir G. Carter*), 1 ♂, 1 ♀; Nigeria, Onitsha (*Marshall*, *Richardson*), 2 ♀. *Exp.* 34 millim.

Genus **POLYTELA**.

Type.
Polytela, Guen. Noct. i. p. 113 (1852) ..... *gloriosæ*.

Proboscis rather slight, non-functional; palpi short, porrect, thickly clothed with hair; frons with rounded prominence with corneous plate below it; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair only and without distinct crests; abdomen with some rough hair at base, but without crests. Fore wing with the apex rounded, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle or shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing pale pink ..... *orientalis*.
B. Fore wing blue-black.
  a. Fore wing with apical yellow patch.
    a^1. Hind wing with the cilia yellow ..... *gloriosæ*.
    b^1. Hind wing with the cilia black ..... *florigera*.
  b. Fore wing without apical yellow patch..... *chrysospila*.

1801. **Polytela orientalis.** (Plate XCI. fig. 8.)

Glottula orientalis, Hmpsn. Moths Ind. ii. p. 168 (1894).

♂. Head and thorax black; palpi below at base, basal joint of antennæ, patagia in front, and paired spots on pro-, meso-, and metathorax orange; tibiæ and tarsi banded with orange; abdomen fuscous black. Fore wing pale pink; a black patch with orange point on it at base; subbasal line represented by black striæ from costa and cell; antemedial line oblique, waved, interrupted at veins, some black before it on costa; claviform absent; orbicular a black point; reniform black, with crimson centre and black patch just before it on costa; postmedial line represented by a point on costa and an incurved waved portion from vein 3 to inner margin; subterminal line black, waved, more or less interrupted, expanding into a patch at costa with a yellow point on it, excurved from costa to vein 4, then incurved, more or less connected with some black spots on termen; a black terminal line; cilia chequered black and orange. Hind wing pinkish white; the underside with discoidal point.

♀. Fore wing with some black on base of inner margin and a larger antemedial patch on costa; orbicular absent; traces of the medial part of postmedial line, the black on terminal area more extensive; cilia with less orange; hind wing fuscous, with a whitish patch in, below, and beyond lower part of cell; cilia chequered fuscous and yellowish.

Hab. Aden (*Yerbury*), 2 ♂; ? Nilgiris (*Swinhoe*), 1 ♀ type. *Exp.* 38 millim.

Larva. On *Pancratium tortuosum*.

1802. Polytela gloriosæ.

Bombyx gloriosæ, Fabr. Sp. Ins. ii. p. 205 (1781); Moore, Lep. Ceyl. iii. p. 13, pl. 145. ff. 1, 1*a*; Hmpsn. Moths Ind. ii. p. 168.

Head and thorax blue-black; palpi at base, basal joint of antennæ and a patch behind them, and paired spots on meso- and metathorax orange; tibiæ and tarsi banded with orange; abdomen black, with the terminal segment orange. Fore wing black suffused with leaden grey; an orange point at base; subbasal line double, black filled in with orange, waved, from costa to vein 1, an orange point beyond it in cell; black spots surrounded with crimson above and below vein 1 before the antemedial line, which is double, filled in with orange, waved; claviform more or less developed, black; orbicular small, round, yellowish defined by black, sometimes with dark centre; a waved medial line oblique from costa to below cell, where it is angled; reniform with crimson centre and yellowish annulus defined by black, open below and with the ground-colour extending

Fig. 130.—*Polytela gloriosæ*. ♂. ½. (From Moths Ind. vol. ii.)

into it: postmedial line double, black more or less filled in with yellowish and with orange at costa, waved, bent outwards below costa, excurved to vein 4, then incurved, some orange points beyond it on costa; an orange and yellowish apical patch, the subterminal line arising from it, consisting of yellowish lunulate marks on black patches defined on inner side by crimson semicircular marks, somewhat dentate at veins 4 and 3 and expanding into a yellowish patch at tornus; a terminal series of small black spots often with yellowish marks on their inner side; cilia chequered black and orange. Hind wing fuscous; the cilia orange; the underside rather paler, with traces of discoidal spot and curved postmedial line.

Hab. Punjab (*Horsfield*, *Horne*), 4 ♂, 5 ♀, Manpuri, 2 ♀, Jubbulpur (*Butler*), 1 ♀; Ganjam, 1 ♀; Bombay (*Leith*), 1 ♂; Canara (*Ward*), 2 ♀; Madras, Belgaum (*Watson*), 1 ♂, Calicut (*Fellows-Wilson*), 1 ♀; Ceylon (*Templeton*, *Green*), 2 ♂, 3 ♀, Trincomali (*Yerbury*), 1 ♀. *Exp.* 28–42 millim.

Larva. Purplish brown irrorated with silvery blue; head orange-red; a dorsal orange patch on 1st somite and subdorsal patches on 2nd and 3rd, 10th, 11th, 12th, with black spots on them; a dorsal series of yellow spots on posterior part of somites except 1, somites 8 to 10 with smaller anterior spots; a subdorsal series of orange

spots; a lateral series of yellow spots anterior and posterior except on thoracic somites, where they are posterior only. Food-plants: *Gloriosa superba* and *Amaryllis*.

1803. Polytela florigera. (Plate XCI. fig. 9.)

Polytela florigera, Guen. Noct. i. p. 114 (1852); Hmpsn. Moths Ind. ii. p. 169.
Polytela inclyta, Wlk. Char. Undescr. Het. p. 27 (1869).

Head and thorax blue-black; metathorax with pair of orange spots; abdomen black, the terminal segment orange. Fore wing black suffused with leaden purple; subbasal line double, black filled in with ochreous, waved, from costa to vein 1, black patches defined by reddish beyond it above and below vein 1; antemedial line double, black filled in with ochreous, oblique, waved; claviform a small black patch; orbicular and reniform with reddish centres and ochreous annuli defined by black, the former round, the latter figure-of-8 shaped; a waved black medial line oblique from costa to median nervure; postmedial line double, black filled in with ochreous, waved, bent outwards below costa, excurved to vein 4, then incurved, some yellow points beyond it on costa; a yellow apical patch, the subterminal line arising from it consisting of ochreous lunules on dentate black marks defined on inner side by reddish suffusion; a terminal series of black lunules; cilia black, with a series of orange points at base. Hind wing fuscous black.

Hab. Bombay, Canara (*Ward*), 5 ♀, type *inclyta*; Madras (*Elliot*), 1 ♂, Belgaum (*Watson*), 1 ♀, Bangalore (*Watson*), 3 ♀. *Exp.* 28–32 millim.

1804. Polytela chrysospila.

Polytela chrysospila, Wlk. xxxii. 635 (1865); Feld. Reis. Nov. pl. 101. f. 15; Hmpsn. Moths Ind. ii. p. 169.

Head and thorax blue-black; mesothorax with orange patch; abdomen black, the terminal segment orange. Fore wing black suffused with leaden blue, leaving the lines black and ill-defined; the subbasal and antemedial lines connected by streaks on costa, below cell, and on inner margin; reniform a lunulate or somewhat quadrate yellow spot; postmedial line excurved from costa to vein 4, then incurved. Hind wing fuscous black.

Hab. Burma, Karen Hills, Thayetmyo (*Watson*), 1 ♀; Java (*Horsfield*), 2 ♂, type. *Exp.* 30 millim.

Genus XANTHOPASTIS.

	Type.
Xanthopastis, Hübn. Verz. p. 211 (1827)	*timais*.
Philochrysa, Grote, Proc. Ent. Soc. Phil. ii. p. 338 (1863)	*timais*.

Proboscis aborted, minute; palpi short, porrect, clothed with long hair; frons smooth; eyes large, rounded; antennæ of male pubescent on under surface; head and thorax clothed with very long rough hair and scales; tibiæ

moderately hairy; abdomen without crests, with lateral fringes of hair. Fore wing broad, the apex rounded; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base.

In an abnormal specimen veins 7, 8 and 8, 9 of the fore wing are stalked.

1805. Xanthopastis timais.

Phalæna timais, Cram. Pap. Exot. iii. p. 148, pl. 275. B (1782); Hübn. Zütr. iii. p. 39, ff. 589, 590; Smith, Cat. Noct. N. Am. p. 180.
Phalæna amaryllidis, Sepp, Ins. Surinam, i. p. 63, pl. 28 (1848).
Philochrysa regnatrix, Grote, Proc. Ent. Soc. Phil. ii. p. 339, pl. 8. f. 4 (1863).

Head, thorax, and abdomen black or dull brown, some of the hairs of head and thorax tipped with white. Fore wing pink,

Fig. 131.—*Xanthopastis timais*, ♂. ½.

the costal edge black; more or less developed black patches at base of costa and inner margin, with some yellow beyond them below costa and a streak below cell; an interrupted waved antemedial black line, angled inwards on median nervure and vein 1, often with a yellow spot before it below costa; medial area with the cell filled in with black, sometimes extending to costa and submedian fold and to base on costal area and in cell; orbicular and reniform with black centres and orange annuli, the former rather elongate elliptical, the latter large and rather irregular; a double postmedial series of small black spots, bent outwards below costa, excurved to vein 4, then incurved; a terminal series of alternating black and yellow patches, with a series of black spots on their inner side diminishing towards costa; a terminal series of deep black striæ; cilia black. Hind wing fuscous black, sometimes with a series of pale points at base of cilia; the underside with the cell and area below it slightly paler, traces of a curved postmedial line.

Hab. U.S.A., Florida (*Thaxter*), 1 ♂, 1 ♀; Mexico, Durango (*Becker*), 2 ♂, Jalapa (*Trujillo*), 1 ♂, 1 ♀, Guerrero (*H. Smith*), 1 ♂; Guatemala (*Rodriguez*), 2 ♂; Costa Rica (*Zurcher*), 1 ♂, San Francisco, (*Rogers*) 1 ♀, (*Van Patten*) 1 ♂; Panama, Bugaba (*Champion*), 1 ♂, 1 ♀, Godman-Salvin Coll., La Chorrera (*Dolby-Tylor*), 2 ♂; Jamaica (*Gosse, Kaye*), 2 ♂, 4 ♀; Haiti (*Tweedie*), 1 ♂, 2 ♀; St. Lucia (*Maj. Cowie*), 1 ♂, 3 ♀; St. Vincent (*H. H. Smith*), 1 ♀; Barbados (*Frampton*), 1 ♂, 1 ♀; Trinidad (*Broadway*), 1 ♀; Br. Guiana, Demerara (*Gennan*), 1 ♀; Brazil (*Dohrn*),

1 ♀, Rio Negro, Manaos (*Trumbill*), 1 ♂, São Paulo (*Jones*), 1 ♂. *Exp.* 42–56 millim.

Larva. Red-brown; the head, 1st and terminal somites, and prolegs orange; mandibles and two spots on each hemisphere brown; warts dark brown, vi. surrounded by a yellow ring; somites 2–10 with numerous small yellow spots, the series at back of each somite larger, 11 with some slight yellow marks; anal shield edged with black; legs and prolegs black at tips; each wart with one hair.

Genus **ADAPHÆNURA**, nov.

Type, *A. minuscula*.

Proboscis fully developed; palpi obliquely upturned, the 3rd joint rather long and dilated at extremity; frons smooth; eyes large, rounded; antennæ of female ciliated; head and thorax clothed with rough hair and without crests; tibiæ fringed with rough hair; abdomen clothed with rough hair, with basal and (?) a dorsal series of crests. Fore wing with the apex rounded and the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

1806. **Adaphænura minuscula**.

Daphænura minuscula, Butl. Cist. Ent. iii. p. 3 (1882); Kirby, Cat. Het. p. 204.

♀. Head black; thorax crimson, the pectus and legs black; abdomen black, the last three segments crimson above and at sides. Fore wing fuscous suffused with deep sap-green and with narrow orange-yellow bands; a subbasal band from costa to submedian fold; a somewhat sinuous antemedial band; two medial

Fig. 132.—*Adaphænura minuscula*, ♀. ½.

bands, the outer with spot beyond it beyond discocellulars; a postmedial band excurved from costa to vein 4, then oblique; a curved subterminal band. Hind wing orange-yellow: the costal area black and some black scales on inner area; a discoidal spot and a terminal band expanding somewhat towards apex.

Hab. Madagascar, Betsileo (*Cowan*), 1 ♀ type in very bad condition. *Exp.* 32 millim.

Genus **PANOLIS**.

Type.
Panolis, Hübn. Verz. p. 214 (1827)..... *flammea*.

Proboscis fully developed; palpi short, porrect, clothed with long hair; frons smooth; eyes small, reniform, not ciliated; antennæ of male serrate and fasciculate; head and thorax clothed with hair only and without distinct crests; tibiæ fringed with long hair; abdomen clothed with rough hair, with dorsal crest at base and lateral fringes of hair. Fore wing with the apex rounded, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked or from angle; 8 anastomosing with the cell near base only.

1807. Panolis flammea.

Noctua flammea, Schiff. Wien. Verz. p. 87 (1776); Hübn. Eur. Schmett. f. 476.
Noctua griseovariegata, Goeze, Beitr. iv. p. 250 (1781); Staud. Cat. Lep. pal. p. 202.
Noctua piniperda, Loschge, Naturf. xxi. p. 27, pl. ii. (1785); Panz. Kob. pl. 1. ff. 11, 12 (1786); Esp. Schmett. iv. pl. 125. ff. 1–6; Dup. Lép. Fr. vi. p. 436, pl. 100. ff. 2, 3; Steph. Ill. Brit. Ent., Haust. iii. p. 19.
Noctua telifera, Payk. Vet.-Akad. Stock. xlviii. p. 60, pl. 2. ff. 2, 3 (1786).
Bombyx spreta, Fabr. Mant. Ins. ii. p. 124 (1787); Curt. Brit. Ent. v. pl. 117.
Noctua pini, Vill. Ent. ii. p. 278 (1789).
Noctua ochroleuca, Hübn. Eur. Schmett., Noct. f. 91 (1827).

Head and thorax rufous more or less mixed with white; the tegulæ and patagia edged with white; tarsi ringed with white; abdomen brown, more or less grey towards base. Fore wing bright

Fig. 153 *Panolis flammea*, ♂. ½.

or deep rufous, more or less strongly suffused with grey or white; the veins white and brown; subbasal line represented by slight white marks below costa and in cell; antemedial line indistinct; oblique, waved, rufous defined by white on inner side; claviform with its extremity indicated by a white and brown point; orbicular and reniform white, often with pale rufous centres, the former small, more or less elongate elliptical, and often with its lower edge produced to a streak on median nervure, sometimes connected with the reniform, which is large and has its upper angle produced; postmedial line defined by white on outer side, dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line represented by a series of more or less indistinct dentate rufous marks, angled outwards below veins 7 and 4 to tornus, the area beyond it sometimes whitish with dark streaks on the extremity of veins; cilia rufous intersected with white. Hind wing fuscous

brown, the cilia white at tips; the underside whitish suffused with rufous, a discoidal spot and curved postmedial line with slight dark streaks at the veins.

Hab. Britain, Forres (*Salvage*), England, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Switzerland; Spain, Catalonia; N. Italy; S.W. Russia; Japan (*Pryer*), 1 ♀. *Exp.* 32–42 millim.

Larva. Meyr. Brit. Lep. p. 76; Barrett, Lep. Brit. v. p. 183, pl. 200. f. 2.

Varying from deep green to pale brown with scattered black dots; dorsal line white; subdorsal line white, sometimes double, black-edged; spiracular line white, edged below with orange or yellow; head brownish. Food-plant, *Pinus sylvestris*. 6–7.

Genus **CERAPTERYX.**

Type.

Cerapteryx, Curt. Brit. Ent. v. p. 451 (1833)..... *graminis*.

Proboscis fully developed; palpi short, oblique, the 2nd joint fringed with hair in front; frons smooth; antennæ of male bipectinate, with moderate branches to apex; head and thorax clothed with hair only and without distinct crests; abdomen with dorsal crest on basal segment and lateral tufts of hair. Fore wing short, the apex truncate, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Head and tegulæ reddish or olive-brown..... *graminis*.
B. Head and tegulæ white ..... *albiceps*.

1808. **Cerapteryx graminis.**

Bombyx graminis, Linn. Syst. Nat. x. p. 506 (1758); Esp. Schmett. pl. 68. f. 1: Hübn. Eur. Schmett. ff. 480, 481; Dup. Lép. Fr. vi. p. 195, pl. 85. f. 4; Staud. Cat. Lep. pal. p. 154.
Bombyx tricuspis, Esp. Schmett. Eur. iii. p. 348, pl. 68. ff. 2, 3 (1788).
Cerapteryx hibernicus, Curt. Brit. Ent. v. pl. 451 (1833).
Heliophobus albineura, Boisd. Icones, pl. 74. f. 4 (1841).
Charæas megala, Alph. Hor. Soc. Ent. Ross. xvii. p. 64, pl. 3. f. 55 (1882)

Head and thorax reddish or olive-brown; abdomen brown. Fore

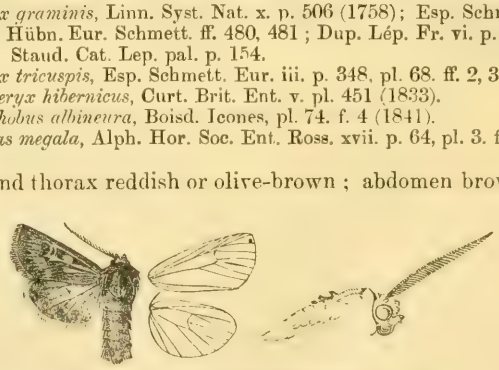


Fig. 134.– *Cerapteryx graminis*, ♂. ½.

wing reddish or olive-brown, the median nervure, and the subcostal and submedian nervures slightly, streaked with white, diffused blackish streaks below base of costa, cell, and vein 1; the ante- and postmedial lines only defined by the medial area being suffused with brown or black from subcostal nervure to vein 1, the former

oblique, the latter excurved from costa to vein 4, then incurved; claviform elongate, brownish white; orbicular and reniform brownish white, small, the former rather elongate elliptical, the latter confluent with the white streak on median nervure, which is tricuspid on base of veins 3, 4, 5; subterminal line represented by a curved series of small dentate black marks; a terminal black line; cilia ochreous. Hind wing fuscous, the cell and area just below it pale; cilia ochreous; the underside whitish irrorated with brown, the terminal area suffused with fuscous, a discoidal point.

Ab. 1. *tricuspis*. Fore wing more uniform bright rufous, the markings obsolescent except the prominent tricuspid white mark at lower angle of cell.

Ab. 2. *albineura*. Fore wing with all the veins streaked with white.

Ab. 3. *megala*. Larger; the antennæ of male more strongly pectinated; markings as in *tricuspis*.—Armenia; W. & E. Turkestan.

Hab. Britain, Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.; Switzerland, Frey Coll.; Iceland, Zeller Coll.; Norway, Dovrefjeld, Odalen, Frey Coll.; Russia, Livonia, Zeller Coll.; Armenia; W. Turkestan, Ferghana, Issyk-Kul; E. Turkestan, Ili, Korla; E. Siberia. *Exp.* 28–36 millim.

Larva. Meyr. Brit. Lep. p. 75; Barrett, Lep. Brit. iv. p. 129, pl. 151. f. 2.

Much wrinkled, greenish ochreous to dark bronze-brown; dorsal, subdorsal, lateral, and subspiracular lines pale, black-edged; head brownish with dark markings. Food-plants, Grasses. 4–6.

1809. Cerapteryx albiceps. (Plate XCI. fig. 10.)

Hadena albiceps, Hmpsn. Moths Ind. ii. p. 203 (1894).

♀. Head and tegulæ white; palpi black except at extremity; frons with black bar; antennæ except at base black; thorax chocolate-brown, with white patch on metathorax; pectus white; legs banded black and white; abdomen black irrorated with brown, the anal tuft white, the ventral surface white irrorated with black and with a broad black band before extremity. Fore wing white irrorated with a few black scales, thicker on terminal area; subbasal line represented by a black striga from costa and another from cell connected with a patch above base of inner margin; antemedial line represented by an oblique striga from costa to median nervure, its extremity hooked on outer side, and by a curved band from submedian fold to inner margin, connected by a curved fascia above vein 1 with the postmedial line which is represented by a small black spot on costa, a lunule beyond the cell and a line from above vein 2 to inner margin, excurved at vein 1; orbicular and reniform only indicated by a few black scales and a discoidal striga; a triangular patch on costa before apex with some white points on it, and a small wedge-shaped patch on inner margin before tornus; a terminal series of minute black lunules; cilia chequered white and fuscous. Hind wing fuscous, the cilia white; the underside

white, irrorated and the terminal area suffused with black, a small discoidal spot, waved postmedial line, and fine terminal line.

Hab. Sikhim (*Knyvett*), type † ♀ in Coll. Elwes. *Exp.* 34 millim.

Genus **SCRIPTANIA**, nov.

Type, *S. michælseni.*

Proboscis fully developed; palpi oblique, fringed with long hair in front; frons smooth; eyes overhung by long cilia; antennæ of male ciliated; head and thorax clothed with rough hair and scales; the pro- and metathorax with spreading crests; abdomen with dorsal crests on first segment. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole, 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the orbicular and reniform conjoined ..... *syzygia.*
B. Fore wing with the orbicular and reniform separate.
  a. Fore wing with the reniform angled inwards on median nervure ..... *nordensejoldi.*
  b. Fore wing with the reniform not angled inwards on median nervure..... *michælseni.*

1810. **Scriptania syzygia**, n. sp. (Plate XCI. fig. 11.)

♀. Head and thorax clothed with white, reddish brown, and black scales and hair; tegulæ with two black lines, patagia edged with blackish; pectus and legs rufous, the tarsi ringed with white; abdomen rufous, the dorsal crest rufous. Fore wing white with a purplish tinge, mostly irrorated and suffused with dark brown; a black streak below base of cell interrupted by the subbasal line, which is double, filled in with white, interrupted and bent outwards at cell and ending at submedian fold, dentate black marks beyond it below cell and above inner margin; anetmedial line double filled in with white, oblique, slightly angled outwards below costa and above inner margin and inwards on vein 1; claviform small, white defined by black; orbicular and reniform whitish, tinged with brown at centre and defined by black, the former oblique, irregularly elliptical, open above, the latter angled inwards on median nervure and touching the former; postmedial line defined by white on outer side, bent outwards below costa, oblique to vein 6, then minutely dentate, inwardly oblique to inner margin near antemedial line; postmedial area purplish white except at costa, on which are some white points; subterminal line white, defined on inner side by a series of small dentate dark marks, angled outwards at vein 7 and dentate to tornus at veins 4 and 3, the area beyond it dark brown except at apex; cilia pale brown intersected by white, a dark brown line at base and brown tips. Hind wing reddish brown, the cilia whitish with a brown line at base; the underside greyish thickly irrorated with brown, a small discoidal lunule and curved postmedial line.

Hab. Patagonia, Magellan, Punta Arenas (*J. J. Walker*), 1 ♀ type. *Exp.* 32 millim.

1811. Scriptania nordenscjoldi.

Mamestra nordenscjoldi, Staud. Hamburg. Magalhaens. iv. p. 68, f. 7 (1899).

Head and thorax white mixed with black; tegulæ and patagia with black line near edges; tarsi fuscous ringed with white; abdomen fuscous grey. Fore wing grey-white irrorated and suffused with fuscous, the end of cell and area beyond and below it and the terminal area except towards apex more strongly suffused; subbasal line represented by oblique double black striæ from costa and cell filled in with white; antemedial line defined by whitish on inner side, waved, angled strongly outwards above inner margin; claviform large, fuscous defined by black; orbicular and reniform grey with whitish annuli defined by black, the former irregularly rounded, the latter angled inwards on median nervure; traces of a medial line from cell to inner margin; postmedial line defined by whitish on outer side, minutely waved, bent outwards below costa, excurved to vein 4, then incurved, some white points on costa beyond it; veins 7, 6, 4, 3 defined by whitish, indenting the subterminal line, which is represented by a series of small white spots on dentate black marks, angled outwards at veins 7, 4, 3; the apex and a terminal line grey; cilia fuscous and grey. Hind wing fuscous, the cilia white at tips; the underside whitish irrorated with brown, a small discoidal spot and curved postmedial line.

Hab. Patagonian Andes, Val de Lago Blanco, 4 ♂, 1 ♀, Punta Arenas. *Exp.* 36 millim.

*1812. Scriptania michælseni.

Agrotis michælseni, Staud. Hamburg. Magalhaens. iv. p. 60, f. 13 (1899).

♂. Head and tegulæ dark brown mixed with grey; patagia and thorax grey with seven brown stripes; abdomen with the basal

Fig. 135. – *Scriptania michælseni*, ♂. ♦.

half grey, the terminal half red-brown. Fore wing purplish grey-brown, the veins streaked with whitish; black patches in interspaces of basal area, traversed by the white subbasal line, which is represented by an oblique striga from costa and an inwardly oblique striga from median nervure, the patch above inner margin extending to near antemedial line, which is whitish, strongly angled outwards below costa and above inner margin and with small wedge-shaped black patch before it above vein 1, and one beyond it

above inner margin; claviform black, with white streaks above and beyond it; cell filled in with black; orbicular and reniform narrow, with brown centres and white annuli defined by black, the former oblique elliptical, the latter inwardly oblique; postmedial line white, very oblique from costa to vein 6, then obliquely curved and strongly angled inwards on vein 1, a series of dentate black marks on its inner edge; subterminal line white, running into an oblique white stripe from apex extending to postmedial line, and indented by prominent white streaks on veins 4 and 3, a series of black spots on its inner and outer sides, those towards costa on inner side dentate; a terminal series of small black lunules; cilia white. Hind wing fuscous brown, with the cilia white; the underside grey thickly irrorated with brown, a small black discoidal spot and curved postmedial line on costal half.

Hab. S. Tierra del Fuego, Uschuaia, type † ♂ in Mus. Hamburg. *Exp.* 32 millim.

Genus **STRIGANIA**, nov.

Type, *S. lithophilus*.

Proboscis fully developed; palpi oblique, the 2nd joint fringed in front with long hair, the 3rd short, porrect; frons smooth; eyes large, rounded, overhung by long cilia; head and thorax clothed with rough hair and scales; tibiæ moderately fringed with hair; abdomen with some rough hair at base of dorsum, but without crests. Fore wing with the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base.

Sect. I. Antennæ of male strongly serrate and fasciculate.

1813. **Strigania lithophilus.**

Heliophobus lithophilus, Butl. Trans. Ent. Soc. 1882, p. 119.

♂. Head ochreous, with some black hair at side; thorax ochreous tinged with fuscous, a black and white line near tips of tegulæ and black and white fascia on patagia; abdomen ochreous, dorsally

Fig. 136.—*Strigania lithophilus*, ♂. ½.

tinged with fuscous, leaving pale segmental lines, ventrally irrorated with fuscous. Fore wing ochreous, the costal area irrorated with fuscous, the cell and the area below and beyond its extremity

running obliquely to apex and the terminal area fuscous; the median nervure and base of vein 1 streaked with ochreous; veins 6, 4, 3, 2, 1 on terminal area blackish defined by ochreous streaks; a black streak below base of cell and an oblique streak above inner margin near base; claviform with ochreous annulus defined by black and with a black patch below its inner side; orbicular and reniform with ochreous or blackish centres and whitish annuli defined by black, the former oblique elliptical, and produced along median nervure to become more or less strongly confluent with the narrow reniform; an irregular oblique ochreous band from apex to inner margin beyond middle intersected by the streaks on the veins; the subterminal line represented by a series of ochreous points on small dentate black marks in the interspaces; a terminal series of small black lunules; cilia ochreous, with two brown lines through them. Hind wing whitish, the veins, inner area, and terminal half suffused with fuscous; cilia ochreous white, with a brown line through them; the underside whitish irrorated with fuscous except on disk, a small discoidal lunule.

♀. Head and fore wing more uniformly suffused with fuscous.

Hab. Chili (*Edmonds*), 2 ♂, 1 ♀ type. *Exp.* 32–34 millim.

Sect. II. Antennæ of male ciliated.

A. Fore wing with terminal whitish band ..... *scripta.*
B. Fore wing without terminal white band ..... *callyrapta.*

*1814. Strigania scripta.

Mamestra scripta, Mssn. Stübel's Reise, p. 141, pl. vi. f. 14 (1890).

♂. Head and thorax pale ochreous with some fuscous and brown hair mixed; patagia with white streak and some black scales near edges; abdomen pale ochreous, tinged with brown towards extremity. Fore wing pale ochreous, the interspaces mostly suffused with brown; subbasal line represented by patches of black scales below costa and cell, the latter crossed by an oblique whitish striga; antemedial line represented by two patches of blackish scales below costa and by a whitish line from cell to inner margin, strongly angled on vein 1 and defined by black on outer side in submedian interspace and on inner side below vein 1; claviform incompletely defined by black and with oblique whitish fascia above and beyond it; orbicular and reniform whitish with brown centres open above and below, defined by a V-shaped black mark between them and an inverted V before orbicular, connected by a whitish streak on median nervure, continued on veins 3, 4 to subterminal line; postmedial line minutely waved, black defined by a whitish band on outer side connected with apex by an oblique whitish fascia, oblique from costa to vein 6 and from vein 4 to inner margin; subterminal line represented by a series of black wedge-shaped marks with whitish lunules on them; a terminal whitish band; cilia whitish, ochreous at base. Hind wing ochreous white, the veins and terminal

area brownish; the underside with the veins and marginal areas irrorated with brown, a dark discoidal lunule.

Hab. Bolivia, Tacora, 12,000 feet, type † in Mus. Berlin. *Exp.* 30 millim.

1815. Strigania calligrapta.

Neuria calligrapta, Butl. Trans. Ent. Soc. 1882, p. 118.

♂. Head and thorax ochreous with some black scales; abdomen ochreous irrorated with dark brown. Fore wing ochreous, irrorated and largely suffused with dark brown; subbasal line represented by ochreous striæ from costa and cell, the former defined on inner side, the latter on both sides by black; antemedial line double, dark brown filled in with ochreous, angled outwards below costa, oblique below cell, and strongly bent inwards to inner margin; claviform well-developed, reddish brown defined by dark brown and

Fig. 137.—*Strigania calligrapta*, ♂. ½.

with an ochreous patch between it and postmedial line; orbicular and reniform with reddish centres and ochreous annuli defined by dark brown, the former very oblique elliptical, the latter slightly angled inwards on median nervure; postmedial line double, filled in with ochreous, minutely waved, bent outwards below costa, excurved to vein 4, then oblique, some pale points beyond it on costa; the veins with slight dark streaks defined by ochreous, the median nervure and veins 6, 4, 3, 1 on postmedial area more strongly defined, those on each side of veins 4, 3 indenting the ochreous subterminal line, which is angled outwards at vein 7, defined on inner side by some dentate dark marks extending to its outer side at middle; a terminal series of small dark lunules; cilia ochreous, with a red-brown line through them. Hind wing whitish suffused with fuscous brown, especially on terminal half; cilia ochreous, with a red-brown line through them; the underside ochreous irrorated with brown, a dark discoidal bar.

Hab. Chili (*Edmonds*), 1 ♂ type. *Exp.* 36 millim.

Genus GRAPHANIA, nov.

Type, *G. disjungens*.

Proboscis fully developed; palpi upturned, the 2nd joint fringed with hair in front, the 3rd porrect; frons with truncate conical prominence with corneous plate below it; eyes large, rounded; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with slight spreading crests;

tibiæ fringed with hair; abdomen with dorsal crest on basal segment, dorsally clothed with rough hair at base and with lateral fringes. Fore wing rather produced, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below angle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with long branches, the apical part serrate.

1816. Graphania disjungens.

Heliophobus disjungens, Wlk. xv. 1681 (1858); Hudson, New Zealand Moths & Butterflies, p. 15, pl. v. f. 43.
Hadena nervata, Guen. Ent. Mo. Mag. v. p. 40 (1868).

Head and thorax white mixed with some brown; frons with black bar; tegulæ with black medial line and brown tips; patagia edged with black; tarsi with pale rings; abdomen grey mixed with brown. Fore wing white tinged in parts with yellow, irrorated

Fig. 138.—*Graphania disjungens*, ♂. ½.

with black and suffused with brown on medial and terminal areas; the veins white; subbasal line represented by oblique black striæ from costa and cell, the latter followed by a slight black streak in submedian fold, then by obliquely placed black and white streaks above and below vein 1; antemedial line black, interrupted at the veins, oblique from costa to above vein 1; claviform defined by black above; orbicular and reniform small, with brown centres and white annuli defined by black, the former round; a medial line oblique from costa to below cell, then waved; postmedial line lunulate, bent outwards below costa, excurved to vein 4, then oblique and angled inwards to antemedial line in submedian fold; subterminal line white, defined by more or less prominent somewhat dentate black marks before and beyond it, angled outwards at vein 7 and dentate to termen at veins 4, 3; a terminal series of black lunules. Hind wing fuscous brown, the cilia white at tips; the underside white irrorated with brown; a discoidal lunule and curved postmedial line.

Hab. New Zealand (*Enys*, *Mathew*, *J. J. Walker*), 4 ♂, 1 ♀ type.
Exp. 40 millim.

Sect. II. Antennæ of male ciliated.

1817. Graphania atavistis.

Aspidifrontia atavistis, Hmpsn. Ann. S. Afr. Mus. ii. p. 441 (1902).

♂. Head and thorax clothed with pale and dark brown, black and white hair; tegulæ with black medial line; abdomen brownish ochreous, whitish at base. Fore wing pale and dark brown; the costal area ochreous irrorated with some dark scales to beyond middle, the subcostal veins streaked with white; the inner area to submedian fold ochreous, leaving vein 1 dark and defined by pinkish and white scales and an oblique dark streak above inner margin except at base; claviform a narrow elongate, black-defined streak from base; orbicular small, diamond-shaped, ochreous defined by

Fig. 139.—*Graphania atavistis*, ♂. ½.

black; reniform with its upper part ochreous, its lower whitish and angled inwards on median nervure to origin of vein 2; the interspaces beyond the cell slightly streaked with black; an ochreous subterminal mark above and below vein 6 and a V-shaped mark between veins 3 and 4; the extremity of the veins streaked with white; a terminal series of black points. Hind wing ochreous white, the veins tinged with brown, diffused towards termen; a terminal series of small black lunules; the underside with the costal and apical half of terminal area irrorated with fuscous; a discoidal lunule.

Hab. Cape Colony, Transkei (*Miss F. Barrett*), 1 ♂ type. *Exp.* 34 millim.

Genus TMETOLOPHOTA, nov.

Type, *T. propria*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint fringed with long hair in front; frons smooth; eyes large, rounded; antennæ of male serrate and fasciculate; head and thorax clothed with hair only, the prothorax with divided anterior crest; abdomen with dorsal crest at base only. Fore wing rather short and broad, the termen rounded; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the orbicular and reniform not forming a V-shaped mark ..... *propria*.
B. Fore wing with the orbicular and reniform forming a V-shaped mark ..... *polygona*.

1818. Tmetolophota propria.

Leucania propria, Wlk. ix. 111 (1856); Butl. Voy. 'Erebus' & 'Terror,' pl. ix. f. 4; Hudson, New Zealand Moths & Butterflies, p. 11, pl. iv. f. 13.

Head and thorax ochreous brown with a reddish or olive tinge; tegulæ with black and white medial line; fore and mid tibiæ striped whitish and black; abdomen ochreous brown, tinged with rufous towards extremity or more ochreous. Fore wing pale grey-brown, usually more or less tinged with rufous or sometimes with ochreous; a prominent black fascia below base of cell to below origin of vein 2; the extremity of median nervure with diffused fuscous on it, with more or less prominent black streak above it and base of vein 4;

Fig. 140.—*Tmetolophota propria*, ♂. ½.

orbicular and reniform small, greyish, obscurely defined by black, the former round, reduced to a slight black streak representing its lower edge or obsolete; a postmedial series of black points, bent outwards below costa and oblique below vein 4, met at vein 4 by a more or less prominent triangular dark shade from termen below apex; a prominent terminal series of black points. Hind wing fuscous brown, or ochreous tinged with fuscous brown, the cilia ochreous; the underside ochreous, the costal area slightly tinged with brown and irrorated with fuscous; a terminal series of small black lunules.

Hab. New Zealand (*Earl*), 1 ♂ type, (*Enys*) 1 ♂, (*Mathew*) 1 ♂, 1 ♀, (*J. J. Walker*) 2 ♂, Marlborough (*Skellon*), 2 ♂, 1 ♀, Blenheim, Mt. Arthur, Mt. Hutt. *Exp.* 32–38 millim.

*1819. Tmetolophota polygona. (Plate XCIV. fig. 10.)

Tmetolophota polygona, Druce, ined.

♀. Head and thorax purplish grey; palpi and sides of frons, a bar above it, and two patches on vertex of head black; tegulæ yellow-brown, with black medial line and purple-grey tips; prothorax and patagia with black patches, thorax with dorsal black stripe; pectus brown in front; abdomen purple-grey, dorsally tinged with brown. Fore wing purple-grey slightly tinged with brown, the markings deep black defined by olive-ochreous, the lines obsolete; a streak below base of costa and another below base of cell; an oblique streak above middle of inner margin only

defined by yellow below; claviform represented by a small black triangle; orbicular and reniform purple-grey, forming a V-shaped mark and defined by black triangles before, between, and beyond them; an oblique series of wedge-shaped marks from apex to below vein 2, where the mark is bisected by a yellow streak; a series of triangular marks just before termen from vein 6 to above vein 1, where the mark is more elongate; a fine terminal line and three lines through the cilia. Hind wing purplish white, the veins and marginal areas suffused with brown; the underside with the veins and marginal areas irrorated with brown; a small discoidal spot.

Hab. N. Peru, Huancabamba, 8000 feet, type † in Coll. Druce. *Exp.* 46 millim.

Genus **CONISANIA**, nov.

Type, *C. leineri.*

Proboscis fully developed; palpi obliquely porrect, fringed with hair below; frons with small rounded prominence; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; fore tibiæ with spine on outer side near extremity, the tarsus with curved claws on each joint, longer towards extremity of joint; abdomen with dorsal crest on basal segment. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below angle of discocellulars; 6, 7 from upper angle or stalked; 8 anastomosing with the cell near base only.

1820. Conisania leineri.

Noctua leineri, Frr. Neu. Beitr. Schmett. ii. p. 145, pl. 184. f. 3 (1831); Herr.-Schäff. Eur. Schmett., Noct. f. 102; Staud. Cat. Lep. pal. p. 158.
Leucania furcata, Ev. Bull. Mosc. 1837, iv. p. 40.
Mamestra cervina, Ev. Bull. Mosc. 1842, iii. p. 546; Herr.-Schäff. Eur. Schmett., Noct. ff. 163–4.
Mamestra pomerana, Schulz, Stett. ent. Zeit. 1869, p. 51.
Mamestra bovina, Staud. Stett. ent. Zeit. 1888, p. 14.
Mamestra albina, Staud. Iris, ix. p. 254 (1896).

Head and thorax bright rufous; tarsi with pale rings; abdomen rufous mixed with ochreous. Fore wing bright rufous, the veins

Fig. 141.—*Conisania leineri*, ♂. ½.

irrorated with white; the subbasal line represented by white points on costa and median nervure; the antemedial line indistinct, waved, with white points on costa, median nervure, vein 1, and inner margin; claviform obsolete; orbicular and reniform with indistinct white ocelli, the former small, round, the latter narrow with some

white on lower part; postmedial line indistinct, dentate, with series of white points on the veins, bent outwards below costa, excurved to vein 4, then incurved, some white points on costa beyond it; subterminal line whitish, angled outwards at vein 7 and dentate at veins 4, 3; a terminal series of slight fuscous lunules; cilia intersected with ochreous. Hind wing ochreous suffused with rufous, rather paler towards base; cilia ochreous white, with a rufous line through them; the underside whitish irrorated with rufous, a discoidal spot, curved postmedial line, and diffused subterminal band.

Ab. 1. *cervina*. Fore wing pale rufous, with white streak on median nervure.—S. Russia, E. Siberia.

Ab. 2. *bovina*. Fore wing brownish rufous, with the median nervure defined by whitish streaks towards extremity, the series of points almost obsolete.—W. Turkestan.

Ab. 3. *furcata*. Fore wing reddish, with white streaks on the veins.—Urals.

Ab. 4. *pomerana*. Fore wing with prominent white streaks on the veins.—S. Germany, W. Turkestan.

Ab. 5. *albina*. Fore wing greyish ochreous, with white streaks on the veins.—Mongolia.

Hab. S. Germany, Pomerania, Zeller, Frey, and Leech Colls.; Austria, Zeller, Frey, and Leech Colls.; Hungary, Leech Coll.; S. Russia, Urals; W. Turkestan, Turcomania, 1 ♂, Ferghana, Issyk-Kul; Mongolia, Uliassutai; E. Siberia. *Exp.* 38–40 millim.

Genus **DASYGASTER**.

Type.

Dasygaster, Guen. Noct. i. p. 201 (1852) ..... *hollandiæ*.

Proboscis fully developed; palpi oblique, fringed with hair in front, the 3rd joint porrect; frons with small rounded prominence, with slight corneous plate below it; eyes large, rounded; antennæ of male typically with bristles and cilia; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; pectus and abdomen clothed with long hair, the latter with dorsal crests at base and lateral fringes of hair, long in male. Fore wing rather short and broad, the apex rectangular; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate, with moderate branches.

A. Fore wing with the claviform present, defined by white ..... *eugrapha*.
B. Fore wing with the claviform absent..... *ligniplena*.

*1821. **Dasygaster eugrapha**. (Plate XCI. fig. 12.)

Dasygaster eugrapha, Turner, ined.

♂. Head and thorax clothed with dark brown, rufous, and grey

scales; frons with black bar; tegulæ with two black lines; patagia with black line near margins; tarsi with pale rings; abdomen brown, laterally and ventrally tinged with purple. Fore wing leaden grey, slightly tinged with rufous and irrorated with fuscous; the medial area with the costal edge white and with black fasciæ in discal and submedian folds; the lines double filled in with white; subbasal line waved, from costa to submedian fold; antemedial line oblique, waved, angled outwards above inner margin, not connected with the claviform, which is narrow and defined by white; orbicular and reniform with white annuli, the former small, round, the latter narrow, with pale centre defined by brown; postmedial line strongly bent outwards below costa, then minutely dentate and with series of dentate black marks on its inner side, oblique below vein 4; subterminal line white, with prominent series of dentate black marks on its inner side, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules; cilia intersected with grey. Hind wing fuscous brown, the cilia pale rufous; the underside ochreous irrorated with brown; a diffused curved postmedial line, the area beyond it suffused with fuscous from apex to vein 2.

Hab. Victoria, Melbourne, type † ♂ in Coll. Turner. *Exp.* 40 millim.

1822. Dasygaster ligniplena.

Xylina ligniplena, Wlk. xi. 762 (1857).

♂. Head and thorax red-brown mixed with some grey; frons with black bar; tegulæ with black medial line; patagia with some

Fig. 142.—*Dasygaster ligniplena*, ♂. ½.

black scales above; spurs and tarsi with pale rings; abdomen rufous, pale at base. Fore wing rufous and pale ochreous irrorated with black; the veins irrorated with black; a black streak below base of cell; subbasal line defined by pale colour on outer side, waved, from costa to submedian fold; antemedial line defined by pale colour on inner side, oblique towards costa, then dentate; claviform absent; orbicular a small pale mark; reniform small, with pale annulus and white point on its lower edge; some dark suffusion above and below end of median nervure and between veins 5 and 2; post-

medial line strongly dentate and produced to white points on the veins, bent outwards below costa and oblique below vein 4, some white points beyond it on costa; subterminal line ochreous white, reduced to points on short black streaks at middle, angled outwards at vein 7, excurved at middle and bent outwards to tornus; a terminal series of black points. Hind wing brown suffused with fuscous, the cilia more ochreous; the underside white, slightly tinged with purplish red and irrorated with fuscous; a black streak on median nervure, discoidal lunule, and curved postmedial line, with the area beyond it suffused with fuscous.

Hab. Tasmania (*Smith*), 1 ♂ type. *Exp.* 42 millim.

Sect. II. Antennæ of male minutely serrate, with fascicles of cilia and bristles.

A. Fore wing with black streak below base of cell.
  a. Fore wing with the black streak strong, extending to near antemedial line ..... *acontosema*.
  b. Fore wing with the black streak slight, short ..... *nephelistis*.
B. Fore wing without black streak below base of cell.
  a. Fore wing reddish brown to grey-brown ..... *hollandiæ*.
  b. Fore wing fuscous black ..... *epundoides*.

*1823. Dasygaster acontosema. (Plate XCI. fig. 13.)

Leucania acontosema, Turner, Trans. Roy. Soc. S. Austr. 1903, p. 4.

♂. Pale brownish ochreous; palpi blackish at sides; frons with brown band above; vertex of head brownish; tegulæ with black medial line; tarsi banded with blackish. Fore wing with black streak below cell to near antemedial line; the subbasal line represented by a black striga from costa; antemedial line interrupted, represented by black strigæ on costa and in cell and angled outwards in submedian interspace and above inner margin; orbicular and reniform whitish, the former small, elliptical, the cell before and between them and the disk beyond the reniform suffused with fuscous; postmedial line minutely waved, black, bent outwards below costa, excurved to vein 4, then oblique; a slight oblique streak from apex; a terminal series of small black lunules. Hind wing ochreous whitish tinged with brown, especially towards termen; cilia white, the underside whiter; both wings with curved crenulate postmedial line.

Hab. Queensland, Rockhampton, type † ♂ in Coll. Turner. *Exp.* 46 millim.

1824. Dasygaster nephelistis, n. sp. (Plate XCI. fig. 14.)

Head and thorax ochreous mixed with rufous; palpi black at side; frons with black bar; tegulæ with black medial line; tarsi with pale rings; abdomen pale ochreous, dorsally tinged with brown and

fuscous. Fore wing pale ochreous, tinged with reddish and irrorated with dark brown; a slight black streak below base of cell; subbasal line represented by a black point on costa; an indistinct waved antemedial line with double points at costa; claviform absent; orbicular and reniform small, indistinct, pale with brown centres, the former elongate elliptical, the latter sometimes with slight white streak on lower edge; some black suffusion in, below, and beyond lower angle of cell; postmedial line dentate and produced to points on the veins, bent outwards below costa and oblique below vein 4, some pale points beyond it on costa; subterminal line dark, angled outwards at vein 7, excurved at middle and bent outwards to tornus, the area beyond it darker except at apex. Hind wing fuscous, paler towards base; cilia pale brownish; the underside whitish slightly tinged with purplish red, irrorated with fuscous, a black discoidal spot and curved postmedial line with fuscous suffusion beyond it.

Hab. S. Australia, Parkside (*Lower*), 1 ♂, 1 ♀, type. *Exp.* 32 millim.

1825. Dasygaster hollandiæ.

Dasygaster hollandiæ, Guen. Noct. i. p. 201 (1852).
Dasygaster leucanioides, Guen. Noct. i. p. 202 (1852).
Graphiphora facilis, Wlk. xi. 745 (1857).

Head and thorax grey and fuscous tinged with rufous; frons with dark bar; tegulæ with dark medial line; spurs and tarsi ringed with white; abdomen grey-brown. Fore wing brown tinged with

Fig. 143.– *Dasygaster hollandiæ*, ♂. ½.

rufous, the veins fuscous irrorated with white; subbasal line represented by slight dark striæ from costa and cell; antemedial line indistinct, double filled in with greyish, highly waved; claviform represented by a slight pale mark with some dark scales on its edges; orbicular and reniform small, with brown centres and whitish annuli defined by brown, the former elongate elliptical, the latter with a more or less prominent white streak on its lower edge; postmedial line dentate and produced to black and white points on the veins, bent outwards below costa, slightly incurved at discal fold, oblique below vein 4, some white points on costa beyond it; subterminal line represented by whitish points on a series of short black streaks, angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia with a fine pale line at base.

Hind wing fuscous brown, the cilia pale tinged with brown or rufous; the underside white, slightly tinged with purplish red and irrorated with fuscous; a black discoidal spot and curved postmedial line, the area beyond it suffused with fuscous.

Ab. 1. *leucanioides*. Fore wing with the markings less distinct, the reniform without the white streak below it and with a fuscous patch beyond it.

Ab. 2. *facilis*. Much more grey-brown and with hardly any rufous tinge.

Ab. 3. Suffused with deep fuscous.

Hab. N. S. Wales, Moreton Bay (*Diggles*), 1 ♀; Victoria, Gisborne (*Lyell*), 1 ♂; S. Australia, Parkside (*Lower*), 1 ♂, 1 ♀; Tasmania, Hobart (*Allport*, *Lyell*), 7 ♂, 1 ♀, type *facilis*. *Exp.* 38–40 millim.

1826. **Dasygaster epundoides.** (Plate XCI. fig. 15.)

Dasygaster epundoides, Guen. Noct. i. p. 202 (1852).
Dasygaster punctivena, Wlk. ix. 242 (1856).

♀. Head and thorax black slightly mixed with grey; antennæ at base and tarsi ringed with white; abdomen fuscous irrorated with grey. Fore wing fuscous black, with some whitish irroration, especially on basal, costal, and inner areas; subbasal line represented by a black striga from costa; antemedial line indistinct, oblique, waved, defined by greyish on inner side; claviform a small black mark; orbicular a black point; reniform very ill-defined and small, formed of black and white scales; postmedial line indistinct, bent outwards and defined by white on outer side below costa, then oblique, dentate, a series of white points on costa beyond it; subterminal line represented by a series of white points on short black streaks, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing fuscous brown, greyish towards base and costa, the cilia whitish at tips; the underside white irrorated with black; a black discoidal lunule, the terminal area black.

Hab. Tasmania, 1 ♀ type *punctivena*. *Exp.* 40 millim.

Sect. III. Antennæ of male with cilia and bristles; claspers very elongate; hind wing with the termen strongly excised from apex to vein 4.

1827. **Dasygaster reversa.**

Aletia reversa, Moore, Lep. Ceyl. iii. p. 6, pl. 144. f. 5 (1884); Hmpsn. Moths Ind. ii. p. 278.

Head and thorax pale ochreous mixed with fuscous; tegulæ with fuscous lines at middle and near tips; patagia with some black scales on upper edge; tarsi with pale rings. Fore wing pale ochreous, tinged with purplish red and irrorated with fuscous;

subbasal line indistinct, waved, from costa to vein 1; antemedial line indistinct, slightly defined by grey on inner side, oblique, waved; claviform sometimes represented by a slight pale mark; orbicular and reniform small, pale, with fuscous centres and outline, the former round; postmedial line defined by whitish on outer side, minutely dentate and produced to black and white points on the veins, bent outwards below costa, excurved to vein 4, then oblique;

Fig. 144.—*Dasygaster reversa*, ♂. ½.

subterminal line very indistinct, pale, arising obliquely from apex and excurved at middle; a terminal series of black points. Hind wing ochreous white, tinged with fuscous, especially on the veins and terminal area; the cilia pale; the underside with waved postmedial line and some black points on apical half of termen.

Ab. 1. Fore wing with the extremity of median nervure and veins 3, 4 streaked with whitish.—New Guinea.

Hab. Madras, Cuddapah, Horsleykondah (*Campbell*), 1 ♂, Nilgiris (*Hampson*), 1 ♀; Ceylon, Pundaloya (*Green*), 2 ♂, 2 ♀, type; New Guinea; Queensland, Brisbane (*Turner*), 1 ♂, 1 ♀. *Exp.* 36–42 millim.

Genus **CIRPHIS**.

Type.

Cirphis, Wlk. xxxii. 622 (1865) ..... *costalis*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint fringed with hair in front, the 3rd short, porrect; frons smooth; eyes large, rounded; head and thorax clothed with hair and scales mixed, the pro- and metathorax with spreading crests; tibiæ fringed with rather long hair; abdomen with dorsal crest on basal segment. Fore wing with the apex somewhat acute, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. (*Cirphis*). Antennæ of male serrate and fasciculate; tibiæ fringed with rather long hair; abdomen clothed with woolly hair.

A. Fore wing with the costal edge white.
  a. Fore wing deep purple ..... *chloriosa*.
  b. Fore wing pale purplish red ..... *costalis*.
B. Fore wing with the costal edge not white ..... *obusta*.

1828. Cirphis eboriosa. (Plate XCI. fig. 16.)

Leucania eboriosa, Guen. Noct. i. p. 74 (1852); Smith, Cat. Noct. N. Am. p. 190.

♂. Head and thorax deep purple-pink; abdomen rufous, dark brown on dorsum. Fore wing deep purple-pink; the costal edge white; the veins near end of cell and termen with slight dark streaks; antemedial dark points on veins and inner margin; a white point at lower angle of cell; a postmedial series of black points on the veins, incurved below vein 4; a subterminal series of white points in the interspaces. Hind wing dark reddish brown, the cilia purplish pink, the underside pale thickly irrorated with purplish pink; the terminal area suffused with pink, a dark discoidal spot and diffused postmedial band.

Hab. Tasmania (not U.S.A.), 1 ♂ type, Hobart (*Norman*), 1 ♂. *Exp.* 40 millim.

1829. Cirphis costalis.

Cirphis costalis, Wlk. xxxii. 623 (1865).

♂. Head and thorax pale purplish rufous; abdomen ochreous tinged with rufous. Fore wing rufous suffused with purplish

Fig. 145.—*Cirphis costalis*, ♂. ½.

pink; the costal edge white; slight fuscous antemedial points on median nervure and vein 1; a white point with some fuscous round it at lower angle of cell; traces of a curved postmedial series of dark points on the veins. Hind wing pale purplish rufous suffused with fuscous, leaving the inner area and termen redder; cilia pale rufous, white at tips; the underside whitish thickly irrorated with red, a black discoidal spot and diffused fuscous postmedial band.

Hab. Tasmania, 2 ♂ type. *Exp.* 38 millim.

1830. Cirphis obusta. (Plate XCI. fig. 17.)

Leucania obusta, Guen. Noct. i. p. 74 (1852); Smith, Cat. Noct. N. Am. p. 190.

♂. Head and thorax deep rufous; abdomen ochreous, the ventral surface rufous. Fore wing deep rufous suffused with

purplish pink; faint traces of a postmedial series of black points on the veins; cilia rufous, with a fine pale line at base. Hind wing ochreous, suffused with reddish fuscous especially towards termen; the cilia rufous; the underside pale suffused with purple-pink, a dark discoidal spot and postmedial line diffused outwardly to termen except at apex.

Hab. Tasmania (not U.S.A.), 1 ♂ type. *Exp.* 46 millim.

Sect. II. Antennæ of male ciliated.

A. Palpi of male with spreading tuft of hair from upperside of 2nd joint.

*1831. Cirphis pilipalpis.

Heliophila pilipalpis, Grote, Proc. Bost. Soc. N. H. xviii. p. 415 (1875); Smith, Cat. Noct. N. Am. p. 189.

♀. Head and thorax pale flesh-colour irrorated with black scales, the tegulæ yellowish; abdomen whitish, the ventral surface

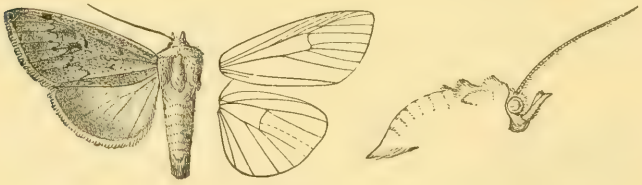


Fig. 146.—*Cirphis pilipalpis*, ♂. ½.

irrorated with a few black scales. Fore wing pale flesh-colour, rather deeper in discal fold towards postmedial line and rather strongly irrorated with black; the costal edge white; antemedial line represented by two dark points on inner area; a pale discoidal bar slightly angled inwards on vein 1 and with black point in lower angle of cell and diffused fuscous patch beyond it; postmedial line fuscous, highly crenulate, bent outwards below costa, then obliquely curved; a terminal series of points. Hind wing yellowish white, the terminal half suffused with fuscous; the cilia white; underside white, the costal and terminal areas irrorated with brown, some black points on termen.

Hab. U.S.A., Florida, in Coll. Schaus, Appalachicola. *Exp.* 46 millim.

B. Palpi of male normal.

a. Mid tibiæ of male with thick fringes of hair on both sides; abdomen thickly clothed with woolly hair, the anal tuft very large.

*a*¹. Fore tibiæ of male and first two joints of tarsi with very thick fringes of long hair; the hind tibiæ with thick fringes of hair on both sides.

1832. Cirphis pseudargyria.

Leucania pseudargyria, Guen. Noct. i. p. 74 (1852); Smith, Cat. Noct. N. Am. p. 189.
Heliophila callida, Grote, New Check-List, p. 30 (1882).

♂. Head and thorax ochreous tinged with purplish red and with slight dark irroration; palpi blackish at sides; fore legs dark;

Fig. 147.—*Cirphis pseudargyria*, ♂. ½.

abdomen rufous, dorsally tinged with fuscous. Fore wing greyish ochreous, irrorated with purplish red and suffused with the same colour in and beyond cell and on terminal area below apex; the antemedial line dark, indistinct, interrupted, waved; orbicular and reniform ochreous white with some red scales at centre, the former irregularly rounded, the latter narrow and slightly angled inwards on median nervure; postmedial line dentate and produced to dark points on the veins, slightly bent outwards below costa, excurved to vein 4, then somewhat incurved; a curved purplish-red shade below apex; a terminal series of dark points. Hind wing fuscous brown; the cilia ochreous, whitish at tips; the underside ochreous, the costal and terminal areas slightly irrorated with brown.

Ab. 1. Much greyer and without the red tinge.

Hab. Canada, 1 ♂; U.S.A., Massachusetts, Burnly, 1 ♂, 1 ♀, New York, Evans Centre, 1 ♂ type, 3 ♀, New Jersey, Kansas (*Snow*), 2 ♀, Texas, Colorado. *Exp.* 34–46 millim.

The single grey male from Canada is without the tufts on fore and mid tibiæ; whether this is natural or due to condition of specimen, I leave to be decided by further material.

Larva. Like *phragmitidicola* but rather paler, the substigmatal line broad, whitish, reddish filled. Dorsal line narrow, pale, brown-edged; subdorsal line distinct, broadly brown-edged above. Brown lateral band obscurely divided by a central line. Leg-plates brown.—H. G. D.

b^1. Fore tibiæ of male thickly tufted with hair; hind tibiæ moderately tufted.

1833. Cirphis multilinea. (Plate XCI. fig. 18.)

Leucania multilinea, Wlk. ix. 97 (1856); Smith, Cat. Noct. N. Am. p. 187.
Leucania solita, Wlk. ix. 99 (1856); Druce, Biol. Centr.-Am., Het. i. p. 262.
Heliophila lapidaria, Grote, Proc. Ac. Nat. Sci. Phil. 1875, p. 419.

Head and thorax brownish ochreous; tegulæ with three dark lines; abdomen ochreous white. Fore wing ochreous; the veins white, clearly defined by red-brown streaks; the interspaces with fine red-brown streaks; the median nervure with a red-brown fascia below it; the costal and inner areas slightly irrorated with black; a black point below origin of vein 2 and another in lower angle of cell; postmedial black points on veins 5 and 2; an oblique pale shade from apex; a terminal series of black points. Hind wing white, the veins and termen tinged with fuscous brown; a terminal series of black points; the underside with the costal area irrorated with dark brown.

Ab. 1. *lapidaria*. Hind wing with the veins and termen not tinged with brown.

Hab. Canada, Orilla (*Bush*), 1 ♀ type; U.S.A., Massachusetts, Buffalo, 1 ♂, 1 ♀, type *lapidaria*, New York; Costa Rica (*Underwood*), 1 ♂, Guatemala (*Champion*), 1 ♂; Panama, Bugaba (*Champion*), 1 ♂, Godman-Salvin Coll., La Chorrera (*Dolby-Tyler*), 1 ♀; Grenada (*H. H. Smith*), 1 ♂; Barbados (*Frampton*), 1 ♂, 2 ♀; Hab. ign., 1 ♂ type *solita*; Paraguay, Sapucay (*Foster*), 1 ♀. *Exp.* 38 millim.

c^1. Fore and hind tibiæ of male moderately tufted with hair.
  a^2. Mid tibia of male with the outer spur curved and flattened, pointed at extremity.
    a^3. Hind wing wholly suffused with fuscous ..... *commoides*.
    b^3. Hind wing white, the termen tinged with fuscous ..... *phragmitidicola*.

1834. Cirphis commoides. (Plate XCI. fig. 19.)

Leucania commoides, Guen. Noct. i. p. 86 (1852); Smith, Cat. Noct. N. Am. p. 188.

Head and thorax dull reddish brown mixed with fuscous; tegulæ with two dark lines; patagia with a few black scales near upper edge; abdomen rufous in male, ochreous in female. Fore wing ochreous suffused with pale rufous, the costal and inner areas slightly irrorated with black; the veins whitish slightly defined by brown streaks; the interspaces with brown streaks; the median nervure more prominently white, defined by black on each side; a black streak from inner margin near base to beyond middle; the

interspaces of terminal area with slight black streaks; traces of a postmedial series of black points on the veins sometimes present; an oblique pale shade from apex: a terminal series of black points. Hind wing brown with a reddish tinge; cilia yellowish white, with a brown line near base; the underside with the costal area irrorated with dark brown.

Hab. CANADA, Nova Scotia, Alberta, Calgary (*Wolley-Dod*), 1 ♂, 1 ♀; U.S.A., New York, 4 ♂, 2 ♀, type, Wisconsin, Illinois, Florida, Minnesota, Washington, 1 ♀, Colorado, New Mexico. *Exp.* 40 millim.

1835. Cirphis phragmitidicola.

Leucania phragmitidicola, Guen. Noct. i. p. 89 (1852); Smith, Cat. Noct. N. Am. p. 187.

Head and thorax brownish ochreous; palpi and sides of head dark brown; tegulæ with three dark lines; abdomen ochreous white.

Fig. 148.—*Cirphis phragmitidicola*, ♂. ½.

Fore wing brownish ochreous sparsely irrorated with black; the veins pale defined by brown streaks; the area beyond the cell with fine brown streaks in the interspaces; the median nervure with white streak more or less strongly defined below by black, sometimes extending beyond the cell as a short streak above vein 4; an antemedial black point sometimes present just below median nervure; a black point in lower angle of cell; a curved postmedial series of black points on the veins; an oblique pale shade from apex; a terminal series of black points usually present. Hind wing white, the veins and termen tinged with ochreous brown; the underside with the costal area irrorated with brown, a terminal series of black points on apical half.

Hab. CANADA; U.S.A., Massachusetts, Beverly, 2 ♀, New York, 5 ♂, 2 ♀, Kansas (*Snow*), 1 ♂, 1 ♀, Texas, Colorado, California, San Francisco, 1 ♀, New Mexico. *Exp.* 32–42 millim.

Larva. Head luteous, sutures paler with a brown stripe each side and mark in clypeus. Body straw-brown, finely darker streaked. Dorsal line narrow, pale, dark-edged; subdorsal broader, pale, a broad straight band above it and narrow edging below; lateral line narrow, pale; markings slightly darker between this and the narrow pale stigmatal line. Leg-shields brownish.—H. G. D.

b^2. Mid tibia of male with the outer spur normal.
a^3. Fore wing tinged with pink ..... *roseola*.
b^3. Fore wing not tinged with pink ..... *farcta*.

1836. Cirphis roseola. (Plate XCI. fig. 20.)

Leucania roseola, Smith, Trans. Am. Ent. Soc. xxi. p. 75, pl. v. f. 9 (1894); Dyar, Cat. Lep. N. Am. p. 163.

Head and thorax pale ochreous with a slight pink tinge; tegulæ with two slight lines, patagia with some black scales near upper edge; abdomen ochreous, white at base; pectus, legs, and ventral surface of abdomen tinged with brownish pink. Fore wing pale ochreous tinged with pink; the veins white defined by fine pink streaks, the interspaces also streaked with pink; a small white spot at lower angle of cell with a black point above it in angle; postmedial line represented by black points on veins 5 and 2. Hind wing white, the termen slightly tinged with ochreous towards apex; the underside with the costal area tinged with ochreous and irrorated with fuscous.

Hab. Canada, Br. Columbia, Kaslo (*J. W. Cockle*), 2 ♀, Vancouver; U.S.A., Washington, Pullman, 1 ♀, Oregon, Corvallis, 1 ♂. *Exp.* 42 millim.

Larva. (Original.) Head shining brown, the reticulations indistinct, the vertical band next the suture distinct and black. Body uniform, creamy brown; dorsal line narrow, white, brown-edged; a distinct, nearly solid, subdorsal black band with a white one below it; a narrow white line in the middle of the brownish lateral space; a white band below this; lateral space below filled by a broad dotted greyish space cut by a narrow line of the ground-colour; substigmatal band broad, defined by its white edges, filled with the ground-colour. Spiracles black. Abdominal feet of joints 7 to 10 black outwardly. Food-plants, Grasses.—H. G. D.

1837. Cirphis farcta. (Plate XCI. fig. 21.)

Heliophila farcta, Grote, Can. Ent. xiii. p. 15 (1881); Smith, Cat. Noct. N. Am. p. 188.

Head and thorax ochreous; tegulæ with traces of three dark lines; patagia with a few black scales near their upper edge; pro- and metathoracic and abdominal crests brownish at tips; abdomen ochreous white. Fore wing ochreous, irrorated with a few black scales on inner area; the veins whitish, defined by rufous streaks; the interspaces with rufous streaks; a black point below origin of vein 2; postmedial black points on veins 5 and 2; traces of an oblique pale shade from apex; a terminal series of minute points sometimes present. Hind wing white, tinged with ochreous towards termen; the underside with the costal area slightly irrorated with brown.

Hab. U.S.A., California, 1 ♂ type (*Walsingham*), 2 ♀. *Exp.* 42–46 millim.

Larva. Like *phragmitidicola*, but paler, straw-yellow, the dark shade between lateral and stigmatal lines pronounced.—H. G. D.

b. Mid tibiæ of male with thick fringes of long hair and scales on underside; abdomen not clothed with woolly hair.
*a*¹. Fore coxæ, femora, and tibiæ of male with thick fringes of hair and scales.
*a*². Fore wing with black spot above median nervure towards end of cell ..... *fasciata*.
*b*². Fore wing without black spot above median nervure towards end of cell ..... *mainica*.

1838. Cirphis fasciata.

Aegilia fasciata, Moore, P. Z. S. 1881, p. 341; id. Lep. Ceyl. iii. p. 7, pl. 144. f. 6; Hmpsn. Moths Ind. ii. p. 280.
Leucania nigrilinea, Leech, P. Z. S. 1889, p. 482, pl. 50. f. 8.

Head and thorax ochreous with a slight rufous tinge; tegulæ grey with three black lines; prothoracic crest grey and black; patagia with some black scales near upper edge; abdomen brownish grey tinged with fuscous. Fore wing ochreous, tinged with rufous

Fig. 149.—*Cirphis fasciata*, ♂. ½.

and irrorated with a few black scales, the veins pale defined by fine brown streaks; vein 4 white; some black streaks in interspaces of terminal area; a black streak below base of cell to origin of vein 2; a fuscous fascia on median nervure expanding beyond lower angle of cell into a wedge-shaped patch extending on termen to just below apex; small whitish spots with small black spots between them above median nervure and in and beyond lower angle of cell; a grey patch below vein 3; traces of a dentate postmedial line bent outwards below costa and oblique below vein 4; cilia fuscous, with a fine pale line at base. Hind wing whitish tinged with brown, especially on the veins and terminal area; the underside with some dark irroration on costal area.

Hab. Japan, Yokohama (*Pryer*), 2 ♂, 1 ♀, type *nigrilinea*; Punjab, Kulu (*Hocking*), 1 ♂, Simla (*Reed*), type; Ceylon, Pundaloya (*Green*), 1 ♂, 2 ♀. *Exp.* 34 millim.

1839. Cirphis nainica.

Leucania nainica, Moore, P. Z. S. 1881, p. 337, pl. 37. f. 15; Hmpsn. Moths Ind. ii. p. 274.
Leucania griseofasciata, Moore, P. Z. S. 1881, p. 339.
Leucania irrorata, Moore, P. Z. S. 1888, p. 409.

Head and thorax pale brownish ochreous mixed with some fuscous tegulæ with three dark lines; abdomen brownish ochreous, the ventral surface with some fuscous irroration. Fore wing pale brownish ochreous slightly irrorated with fuscous; some rufous suffusion in and beyond cell; the median nervure defined by a fuscous fascia below, expanding below lower angle of cell into a triangular patch extending to termen below apex; median nervure streaked with white from before middle, hooked at lower angle of cell, in which there is a black point; an indistinct curved postmedial series of points on the veins, sometimes with traces of a crenulate line between them; the veins of terminal area slightly streaked with white, the interspaces with brown streaks; a terminal series of black points. Hind wing fuscous brown, rather paler at base; the underside pale, the costal and terminal areas tinged with brown and irrorated with fuscous, some black points on termen.

Hab. Punjab, Simla (*Harford*), 1 ♂, Dalhousie, 1 ♀ type *griseofasciata*, Dharmsála (*Hocking*), 2 ♂, 2 ♀, type *irrorata*, Naini Tal. *Exp.* 36–40 millim.

b^1. Mid femora of male with fringe of long hair and scales.
  a^2. Fore wing with black point in cell above origin of vein 2 ..... *insularis.*
  b^2. Fore wing without black point in cell above origin of vein 2 ..... *prominens.*

1840. Cirphis insularis. (Plate XCI. fig. 22.)

Leucania insularis, Butl. P. Z. S. 1880, p. 674.
Axylia irrorata, Moore, P. Z. S. 1881, p. 341; Hmpsn. Moths Ind. ii. p. 280.
Axylia albivena, Moore, P. Z. S. 1881, p. 342.

Head, thorax, and abdomen ochreous; sides of palpi and frons black; tegulæ with black medial line and black and grey tips; patagia with some black scales on upper edge; metathoracic crest black; legs striated with blackish. Fore wing ochreous slightly irrorated with black; a slight black streak in base of submedian fold; median nervure and base of vein 4 more or less prominently white, with a slight diffused black fascia above and below median nervure, then from lower angle of cell oblique to termen at vein 6; antemedial line sometimes represented by black marks above and below median nervure; orbicular and reniform represented by black points or small spots in cell above origin of vein 2 and at lower angle; traces of a highly dentate postmedial line with two series of black points on it, the inner in the interspaces, the outer on the veins, oblique below vein 4 and sometimes quite obsolete; a

terminal series of black points, usually prominent; cilia intersected with fuscous. Hind wing white tinged with ochreous, the terminal area with brown; a terminal series of black points; the underside with the costal area slightly irrorated with fuscous.

Hab. Formosa (*Hobson*), 1 ♂ type; Punjab, Kulu, Sultanpur (*G. Young*, *Hocking*), 6 ♂ type *irrorata*, Kangra Valley (*Dudgeon*), 1 ♀, Simla (*Swinhoe*), 2 ♂ type *albivena*; Madras, 1 ♀; S.E. Borneo, 1 ♀. *Exp.* 28–36 millim.

1841. Cirphis prominens.

Leucania prominens. Wlk. ix. 102 (1856).
Leucania hispanica, Bell. Ann. Soc. Ent. Fr. 1863, p. 421, pl. 9. f. 5; Staud. Cat. Lep. pal. p. 191.

Head, tegulæ, and prothoracic crest flesh-colour, the tegulæ with fuscous and white medial line and tips; thorax yellow, with some black scales near upper edge of patagia; abdomen ochreous, whitish

Fig. 150.—*Cirphis prominens*, ♂. ½.

at base, the lateral fringes of male yellow. Fore wing ochreous sparsely irrorated with black, the veins defined by slight brown-pink streaks, the interspaces of terminal area also streaked with brown; the median nervure and veins 4 and 3 white, the former defined below by a brown shade and with a slight blackish streak below it at base; a black point in lower angle of cell. Hind wing white, the veins and termen tinged with ochreous; the underside with the costal area sparsely irrorated with fuscous, some black points on apical part of termen.

Hab. Spain, Catalonia, Zeller and Leech Colls., Andalusia; Algeria; Nigeria, Accra (*Carter*), 1 ♀; Congo (*Curror*), 1 ♀ type; Br. E. Africa, Kikuyu (*Crawshay*), 1 ♂; Mashonaland (*Dobbie*), 1 ♂. *Exp.* 28–36 millim.

Larva. Mill. Ic. ii. p. 414, pl. 93. ff. 5–7.

Pale yellowish or rufous; dorsal line fine defined by brown; subdorsal, lateral, and sublateral lines strong, white in the rufous specimens and defined by brown. Food-plants, Grasses. 5 & 8.

c. Mid tibiæ of male normal.
  a^1. Fore tibiæ, femora, and coxæ of male with immense tufts of long scales and hair.
    a^2. Fore wing with blackish fascia on median nervure extending to near termen ..... *diatreta*.

b^2. Fore wing without blackish fascia on median nervure.
a^3. Fore wing with the veins defined by fine brown streaks ..... *uda*.
b^3. Fore wing with the veins not defined by brown streaks.
a^4. Fore wing with the ground-colour ochreous tinged with rufous or grey ..... *abdominalis*.
b^4. Fore wing with the ground-colour pale grey-brown ..... *adjuncta*.
c^4. Fore wing with the ground-colour deep purple red ..... *leucosta*.

1842. Cirphis diatrecta.

Leucania diatrecta, Butl. Trans. Ent. Soc. 1886, p. 390.

Head and thorax brownish ochreous; patagia with blackish streak near upper edge; abdomen whitish tinged with brown. Fore wing brownish ochreous sparsely irrorated with black; the costal edge whitish; a somewhat diffused blackish fascia along median nervure and below vein 5 to near termen, with a white point on it at lower

Fig. 151.—*Cirphis diatrecta*, ♂. ½.

angle of cell and a black point in lower angle; a black fascia on inner margin from before middle to tornus; the terminal area darkened by obscure streaks in the interspaces; a terminal series of black points. Hind wing white, the veins and terminal area tinged with brown; the cilia brown or reddish from apex to vein 2; the underside with the costal area and the apical half of terminal area tinged with vinous red and irrorated with brown.

Hab. Queensland, Peak Downs, 1 ♀ type, Brisbane (*Turner*), 2 ♂, 2 ♀. *Exp.* 36 millim.

1843. Cirphis uda. (Plate XCI. fig. 23.)

Leucania uda, Guen. Noct. i. p. 80 (1852).
Leucania curta, Wlk. xxxii. 627 (1865).
Leucania stenographa, Lower, P. Linn. Soc. N. S. W. xxv. p. 30 (1900).

♀. Pale brownish ochreous; fore legs fuscous in front; abdomen with sublateral series of black points, the ventral surface irrorated with black. Fore wing finely irrorated with black, the costal edge whitish; traces of an antemedial line oblique from costa to above inner margin, where it is angled; median nervure slightly

streaked with white, a white point at lower angle of cell with more or less fuscous round it; an indistinct highly crenulate postmedial line, bent outwards below costa, excurved to vein 4, then oblique or reduced to two series of points; the veins of terminal area pale and with slight dark streaks in the interspaces between them; a terminal series of black points. Hind wing whitish tinged with brown, deepening to fuscous towards termen; the underside whitish, the costal area irrorated with brown, the terminal area suffused with fuscous to vein 2.

Hab. Australia (*Damel*), 1 ♀ type *curta*; S. Australia, Gisborne, Parkside. *Exp.* 36 millim.

1844. Cirphis abdominalis. (Plate XCI. fig. 24.)

Nonagria abdominalis, Wlk. ix. 131 (1856).
Mythimna robusta, Wlk. xi. 710 (1857).
Leucania labeculis, Lucas, Proc. Roy. Soc. Queensland, viii. p. 84 (1892).

Head and thorax ochreous rufous; abdomen pale, tinged with rufous. Fore wing ochreous rufous, sometimes rather greyer, slightly irrorated with darker scales; the costal edge whitish; a small whitish spot at lower angle of cell with a black point before it in angle; an indistinct obliquely curved postmedial series of dark points on the veins; a more or less prominent terminal series of dark points. Hind wing white, the veins and termen tinged with yellow-brown, the cilia with a vinous tinge; the underside with the costal and terminal areas irrorated with brown, a series of black points on termen.

Hab. Queensland, Brisbane (*Turner*), 1 ♂, 1 ♀, Rockhampton, 1 ♀; New South Wales, Moreton Bay (*Diggles*), 1 ♂ type *robusta*; Australia, 1 ♂ type. *Exp.* 38–40 millim.

1845. Cirphis adjuncta. (Plate XCI. fig. 25.)

Leucania adjuncta, Wlk. Char. Lep. Het. p. 68 (1869).

♂. Head and thorax pale brownish grey irrorated with black scales; fore legs with the tufts on coxæ tinged with rufous and on tibiæ with purplish fuscous; abdomen whitish tinged with brown. Fore wing pale grey-brown irrorated with black, the disk tinged with purplish; the costal edge whitish; the antemedial line represented by obscure black spots in and below cell; a small whitish spot at lower angle of cell with a black point before it in angle; a curved postmedial series of black points on the veins; a more or less prominent series of terminal points. Hind wing white, the veins and terminal area down to vein 2 tinged with fuscous brown; cilia brown with pale line at base and purplish tips, white from vein 2 to tornus; the underside with the costal and terminal areas to vein 2 irrorated with brown, a terminal series of black points.

♀ browner; fore wing without the purplish tinge.

Ab. 1. Fore wing with fuscous patch beyond lower angle of cell; hind wing much more suffused with brown.

Ab. 2. Hind wing whiter, the veins and terminal edge only tinged with brown, the black points appearing on upperside.—W. Australia.

Hab. Queensland, Brisbane (*Turner*), 1 ♂, 2 ♀; W. Australia, Roebourne (*Lyell*), 1 ♀. *Exp.* 34–38 millim.

1846. **Cirphis leucosta.** (Plate XCI. fig. 26.)

Leucania leucosta, Lower, P. Linn. Soc. N. S. W. xxvi. p. 644 (1901).

♂. Head and thorax deep purplish red; abdomen pale reddish brown, purplish red on ventral surface. Fore wing deep purple-red irrorated with black and grey; the costal edge white; traces of an oblique antemedial line; a white point on a small fuscous patch at lower angle of cell; traces of a curved postmedial series of dark points on the veins and of a terminal series; cilia with a fine pale line at base. Hind wing white, the veins and terminal area to vein 2 suffused with purplish red; cilia purplish red with a fine pale line at base; the underside with the costal and terminal areas irrorated with purplish red, some black points on termen.

Hab. Queensland, 1 ♂; S. Australia. *Exp.* 34 millim.

b^1. Fore tibiæ of male moderately fringed with hair on both sides; the femora and coxæ fringed with long hair.
  a^2. Anal tufts of male very large; fore wing without black point in lower angle of cell ..... *leucosphenia.*
  b^2. Anal tufts of male moderate; fore wing with black point in lower angle of cell ..... *lasiomera.*

*1847. **Cirphis leucosphenia.**

Leucania leucosphenia, Beth. Baker, A. M. N. H. (7) xv. p. 196 (1905).

Head and thorax ochreous mixed with rufous and dark brown; tegulæ with strong dark medial line; abdomen ochreous, slightly tinged with purplish pink and irrorated with dark brown. Fore

Fig. 152.—*Cirphis leucosphenia*, ♂. ½.

wing ochreous thickly irrorated with fuscous; the veins defined by fine fuscous streaks, the interspaces also streaked with fuscous; an oblique black streak above inner margin before middle; a short

white streak on extremity of median nervure slightly hooked at lower angle of cell; vein 4 more strongly streaked with white; traces of a postmedial series of dark points bent outwards below costa and oblique below vein 4; an oblique pale fascia from apex with a triangular dark shade below it; a terminal series of black points; a fine pale line at base of cilia which are intersected with white. Hind wing pale purplish pink tinged with brown, especially on the veins and terminal area; some dark points on apical half of termen; the underside pale ochreous, the costal area tinged with pink and the costal and terminal areas irrorated with fuscous, some short black postmedial streaks on the veins and a terminal series of black points.

Hab. New Guinea, Dinawa, type † ♂ ♀ in Coll. Bethune Baker. *Exp.* 44 millim.

*1848. **Cirphis lasiomera**, n. sp. (Plate XCII. fig. 3.)

♂. Head and tegulæ whitish ochreous, the former irrorated with black, the latter with two dark lines and purplish tips; palpi blackish at sides; thorax ochreous tinged with rufous, some black scales near upper edge of patagia; abdomen ochreous, dorsally tinged with rufous. Fore wing ochreous white, the interspaces suffused with purplish rufous; the veins defined by fine black streaks and the interspaces of terminal half streaked with black; subbasal line represented by a black point on costa, the antemedial line by a series of black points oblique from costa to submedian fold, where it is angled; a short whitish streak on extremity of median nervure, hooked on discocellulars and with a black point in lower angle of cell and small spot beyond the angle; postmedial line somewhat interrupted and maculate, bent outwards below costa and oblique below vein 4; an oblique whitish fascia from apex with some diffused fuscous below it; a terminal series of black points. Hind wing ochreous white, the veins and terminal area suffused with brown; a terminal series of dark points; the underside with discoidal spot and postmedial series of short streaks on the veins.

Hab. Java, Preanger, 1 ♂ type. *Exp.* 36 millim.

c^1. Abdomen of male with paired sublateral fans of large scales, the coxæ with fringes of scales and hair, the anal tuft large.
  a^2. Hind wing suffused with brown ..... *ptyonophora.*
  b^2. Hind wing semihyaline white ..... *loreyi.*

1849. **Cirphis ptyonophora**, n. sp. (Plate XCI. fig. 27.)

Leucania punctosa, Wlk. Melliss' St. Helena, p. 182 (nec Treit.).

Head, thorax, and abdomen pale reddish brown more or less suffused with dark brown; anal tuft rufous. Fore wing greyish tinged with rufous and irrorated with black; a black streak below

base of cell; a diffused blackish fascia below median nervure; the veins whitish, defined by fine brown streaks on terminal half; the cell and interspaces of terminal half streaked with black; a white point at lower angle of cell; the postmedial line bent outwards below costa, then represented by a series of points on the veins, oblique below vein 4; an oblique pale fascia from apex to vein 5, a terminal series of black points; cilia brown intersected with white. Hind wing ochreous white suffused with brown, especially on veins and terminal area; the underside whitish, the costal and terminal areas sparsely irrorated with black, a slight discoidal lunule and terminal series of small triangular black spots.

Hab. St. Helena (*Wollaston*), 3 ♂, 2 ♀, type. *Exp.* 40–42 millim.

1850. Cirphis loreyi.

Noctua loreyi, Dup. Lép. Fr. vii. p. 81, pl. 105. f. 7 (1827); Herr.-Schäff. Eur. Schmett., Noct. ff. 309, 314; Hmpsn. Moths Ind. ii. p. 274; Staud. Cat. Lep. pal. p. 193.
Noctua caricis, Treit. Schmett. Eur. x. 2, p. 91 (1835).
Leucania exsanguis, Guen. Noct. i. p. 82 (1852).
Leucania curvula, Wlk. ix. 102 (1856).
Leucania collecta, Wlk. ix. 105 (1856).
Leucania exterior, Wlk. ix. 106 (1856).
Leucania thoracica, Wlk. ix. 106 (1856).
Leucania designata, Wlk. ix. 107 (1856).
Leucania denotata, Wlk. ix. 107 (1856).

Head and thorax brownish ochreous; tegulæ with two dark lines, the tips greyish; abdomen whitish tinged with brown, the sublateral tufts of male fuscous, the genital tufts ochreous. Fore wing brownish ochreous, with the costal and inner areas irrorated with fuscous; the veins whitish, irrorated with fuscous and defined by fine brown streaks, the interspaces also streaked with brown; a black streak

Fig. 153.—*Cirphis loreyi*, ♂. ½.

below base of cell: median nervure defined by brown above and below, extending beyond the cell to join the triangular brown shade from termen below apex; a white point at lower angle of cell; a postmedial series of black points on the veins, bent outwards below costa and oblique below vein 4; a terminal series of black points. Hind wing white, the veins and termen slightly tinged with brown: the underside with the costal area irrorated with fuscous, a terminal series of black points from apex to vein 2.

Hab. Britain, Sussex; France, Leech Coll.; Austria, Leech Coll.; Switzerland; Italy, Zeller, Frey, and Leech Colls.; Egypt; Morocco (*Meade-Waldo*), 1 ♀; Canaries; Madeira (*Mungo Park*), 1 ♂; Congo (*Sir J. Richardson*), 2 ♂, 2 ♀, type *curvula*; Ascension I. (*Conry*), 1 ♀; Br. E. Africa, Eb Urru (*Betton*), 1 ♀, Athi-ya-Mawe (*Betton*), 1 ♂, Ndimu (*Betton*), 1 ♀; Natal, Estcourt (*Hutchinson*), 1 ♂, 2 ♀, Durban (*Leigh*), 1 ♂; Basutoland, Maseru (*Crawshay*), 1 ♂, Mafetang (*Crawshay*), 1 ♀; Asia Minor, Pontus, Taurus; Syria, Beirut, Zeller and Leech Colls., 1 ♂, 1 ♀; Persian Gulf, Fao (*Cuming*), 1 ♂, 1 ♀; Japan, Yokohama (*Pryer*), 2 ♂, 3 ♀; Formosa (*Hobson*), 1 ♀; Punjab, Kulu, Sultanpur (*G. Young*), 2 ♀, Simla, 1 ♀, Rawal Pindi, 1 ♀, Cambellpur (*Verbury*), 4 ♀, Dharmsála (*Hocking*), 2 ♂, 3 ♀, Jubbulpore (*Butler*) 2 ♂, (*Hearsey*) 2 ♂, 1 ♀, types *denotata*, *collecta*, and *exterior*; Deccan, 1 ♀ type *thoracica*; Canara (*Ward*), 1 ♀ type *designata*; Nilgiris (*Hampson*), 1 ♀; Burma, Irrawaddy R. (*Carpenter*), 1 ♂; Philippines, Cebu, 1 ♂; Java (*Horsfield*, *Vollenhoven*), 2 ♂, 4 ♀; N. Australia, Roebuck Bay (*J. J. Walker*), 3 ♂; Queensland, Brisbane (*Turner*), 1 ♂; Fiji, 1 ♂. *Exp.* 34–44 millim.

a^1. Legs of male normal.
  a^2. Abdomen of male with paired ventral tufts of long hair from base.
    a^3. Abdomen of male clothed with woolly hair and with protrusible tufts of long hair from the stigmata.
      a^4. Wings of male on underside with the base of fore wing and basal half of hind wing clothed with rough rufous hair.

1851. Cirphis dasuta, n. sp.

♂. Head and thorax fulvous brown; sides of palpi and frons greyish; patagia with some black scales above; legs irrorated with

Fig. 154.—*Cirphis dasuta*, ♂. ½.

fuscous; abdomen ochreous fulvous. Fore wing pale ochreous brown irrorated and striated with fuscous; subbasal line represented by black points on costa and median nervure, the antemedial line by points on costa and veins, the claviform by a black point at its extremity; orbicular represented by a rounded ochreous spot, the reniform by an ochreous line on an ill-defined blackish lunule with with white point at lower angle of cell; a double postmedial series of black points, the inner in the interspaces, the outer on the veins,

excurved from costa to vein 4, then oblique; a terminal series of black points. Hind wing ochreous brown, the cilia pale. Underside of fore wing with some rufous hair at base, cell fuscous, costal and terminal areas irrorated with fuscous, an oblique postmedial line; hind wing with the basal half clothed with rufous hair, the terminal half greyish irrorated with fuscous, a curved postmedial line and some points on termen.

Hab. Hawaii, Kona, 4000′ (*Perkins*), 1 ♂ type. *Exp.* 44 millim.

b^4. Wings of male on underside not clothed with rough hair.
  a^5. Fore wing suffused with purple-red.
    a^6. Fore wing with slight pale streaks on the veins ..... *pyrrhias.*
  a^6. Fore wing without pale streaks on the veins.
    a^7. Fore wing with white point at lower angle of cell ..... *macrosaris.*
    a^7. Fore wing with small fuscous patch at lower angle of cell..... *typhlodes.*
  a^5. Fore wing not suffused with purple-red ..... *amblycasis.*

1852. Cirphis pyrrhias. (Plate XCI. fig. 28.)

Leucania pyrrhias, Meyr. Faun. Hawaii. i. p. 141 (1899).

Head and thorax purplish red, the hairs tipped with grey; abdomen ochreous slightly tinged with red. Fore wing ochreous, suffused and thickly striated and irrorated with purplish red; the veins whitish irrorated with black; costal edge whitish; subbasal line represented by a point on costa, the antemedial line by an indistinct oblique series of points on costa and veins; a white point at lower angle of cell with small fuscous patch beyond it; a curved postmedial series of points and a terminal series. Hind wing brownish ochreous tinged with purplish pink; the cilia pinker and whitish at tips; the underside whitish tinged with pink, the costal and terminal areas irrorated with black, some black points on apical half of termen.

Hab. Hawaii, Kauai, Mt. Waimea, 4000′ (*Perkins*), 2 ♂ type, Kauai Hoholuamauo (*Perkins*), 1 ♀. *Exp.* 44 millim.

1853. Cirphis macrosaris.

Leucania macrosaris, Meyr. Faun. Hawaii. i. p. 140 (1899).

Fig. 155.—*Cirphis macrosaris*, ♂. ½.

♂. Head and thorax ochreous tinged with rufous; abdomen

ochreous. Fore wing ochreous, suffused with rufous and irrorated and striated with brown; subbasal line represented by a fuscous point on costa, the antemedial line by an oblique series of points on costa and veins; a white point at lower angle of cell with a little fuscous beyond it; a curved postmedial series of points and a terminal series. Hind wing ochreous slightly tinged with pink; the underside rather paler, the costal area slightly irrorated with brown, some black points on apical half of termen.

Hab. Hawaii, Kona, 15000′ (*Perkins*), 1 ♂ type. *Exp.* 40 millim.

1854. Cirphis typhlodes. (Plate XCI. fig. 29.)

Leucania typhlodes, Meyr. Faun. Hawaii. i. p. 141 (1899).

♂. Head and thorax ochreous tinged with rufous; pectus, legs, and abdomen ochreous. Fore wing ochreous, suffused with rufous and irrorated and striated with brown; the subbasal line represented by a fuscous point on costa, the antemedial by an oblique series on costa and veins; a small fuscous patch at and beyond lower angle of cell; a curved postmedial series of points and a terminal series. Hind wing ochreous slightly tinged with pink; cilia white at tips; the underside ochreous irrorated with brown, some black points on apical half of termen.

Hab. Hawaii, Olua (*Perkins*), 1 ♂ type. *Exp.* 38 millim.

1855. Cirphis amblycasis. (Plate XCI. fig. 30.)

Leucania amblycasis, Meyr. Faun. Hawaii. i. p. 141 (1899).

Head and thorax pale grey-brown, often with an ochreous or rufous tinge; palpi at sides and legs irrorated with fuscous; patagia with some black scales near upper edge; abdomen pale ochreous or greyish brown. Fore wing greyish ochreous, tinged with rufous and thickly irrorated and striated with fuscous; subbasal line represented by black points on costa and median nervure, the antemedial line by points on costa and veins; claviform represented by a faint flesh-coloured streak with a black point on it; orbicular and reniform faint round flesh-coloured marks; a white point edged with black at lower angle of cell with slight fuscous mark beyond it; a more or less prominent double postmedial series of black points, the inner in interspaces, the outer on the veins; a terminal series of black points. Hind wing greyish ochreous uniformly suffused with fuscous except costal area; cilia pinkish at base, whitish at tips; the underside ochreous white, the costal and terminal areas irrorated with fuscous, faint traces of a curved postmedial line, some black points on termen often present.

Hab. Hawaii, Honolulu (*Blackburne*), 1 ♂, 1 ♀, Lanai (*Perkins*), 2 ♂ type, Haleakala, 1 ♀. *Exp.* 42–44 millim.

b^3. Abdomen of male not clothed with woolly hair and without protrusible tufts from the stigmata.
a^4. Underside of wings of male clothed with silvery scales.
a^5. Hind wing of male on underside with the extremity of veins 8 to 3 clothed with long downturned hair.

1856. Cirphis laniata.

Leucania laniata, Hmpsn. J. Bomb. Nat. Hist. Soc. xi. p. 444, pl. A. f. 22 (1897).

♂. Head and thorax pinkish white mixed with some brown; tegulæ with three brown lines; patagia with some black scales near upper edge; abdomen pinkish white, dorsally tinged with fuscous, the ventral tufts black. Fore wing white, slightly tinged with pink

Fig. 156.—*Cirphis laniata*, ♂. ½.

and irrorated with black; a slight black streak below base of cell; the veins defined by fine brown streaks; the interspaces of terminal half streaked with brown; the extremity of median nervure with a white streak; a black point in lower angle of cell; an indistinct postmedial series of black points, bent outwards below costa, excurved to vein 4, then oblique; an oblique brown shade from termen just below apex, followed by a series of black points on veins 5–1; a terminal series of black points. Hind wing white, tinged with brown except towards base, costa, and inner margin; cilia white, brownish at base from apex to vein 2. Underside of both wings brilliant silver except costal area, which is pinkish irrorated with black; fore wing with postmedial black spot on costa and terminal series of points; hind wing with discoidal point, the hair on apical area fuscous at base.

Hab. Sikhim, 1800′ (*Dudgeon*), 1 ♂ type. *Exp.* 36 millim.

b^3. Hind wing of male on underside without downcurved hair on veins 8 to 2.
a^6. Fore wing with dark streaks in interspaces of terminal area.
a^7. Fore wing with pale streak on extremity of median nervure, hooked at lower angle of cell.
a^8. Fore wing with the costal area paler than ground-colour.
a^9. Fore wing with black streak below base of cell.
a^{10}. Hind wing of male on underside with the silver extending to termen ..... *inframicans*.

b^{10}. Hind wing of male on underside with the silver not extending to termen	*pryeri.*
b^{9}. Fore wing with rufous streak below base of cell	*hamifera.*
c^{9}. Fore wing without streak below base of cell	*cryptargyria.*
b^{7}. Fore wing with the costal area concolorous.	
a^{9}. Hind wing almost entirely suffused with fuscous	*decisissima.*
b^{9}. Hind wing white slightly tinged with fuscous	*nebulosa.*
b^{7}. Fore wing with the pale streak on median nervure not hooked at lower angle of cell	*congrua.*
b^{5}. Fore wing without dark streaks in interspaces of terminal area.	
a^{7}. Fore wing with short white streak on extremity of median nervure.	
a^{8}. Hind wing white, the veins tinged with fuscous	*usta.*
b^{8}. Hind wing almost entirely suffused with fuscous	*inframicans.*
b^{7}. Fore wing with yellow spot with black point on it at lower angle of cell	*subsignata.*
c^{7}. Fore wing with minute white point at lower angle of cell	*simplex.*

1857. Cirphis inframicans.

Leucania inframicans, Hmpsn. Ill. Het. B. M. ix. p. 90, pl. 161. f. 2 (1893); id. Moths Ind. ii. p. 270.

Head and thorax violaceous grey mixed with some brown; tegulæ with three dark lines; mid tibiæ with black streak on outer side; abdomen whitish dorsally tinged with brown, the ventral tufts black. Fore wing violaceous grey; the costal and inner areas irrorated with black, the cell and area below it suffused with pale golden brown; a blackish streak in base of submedian fold and an oblique streak above inner margin before middle; the terminal half of median nervure streaked with white, slightly defined by black above, and with a small hook on discocellulars; veins 3, 4 also streaked with white, the interspaces above them with fine black streaks and vein 2 irrorated with black; faint traces of a postmedial line strongly bent outwards below costa, then very obliquely curved; a pale oblique streak from apex and an ill-defined rufous patch between veins 4 and 2; a terminal series of black points; cilia intersected with white. Hind wing white, the terminal area tinged with fuscous from apex to vein 2. Underside with the disk of fore wing in male and the hind wing except basal and inner areas suffused with silver scales, a postmedial black point on fore wing and a terminal series; female with the fore wing and costal and terminal areas of hind wing tinged with pinkish and irrorated with brown.

Hab. Punjab, Almorah (*Boys*), 1 ♂, Manpuri, 1 ♂; Ceylon,

Pundaloya (*Green*), 1 ♂ type; Lr. Burma, Thayetmyo (*Watson*), 1 ♂, 1 ♀. *Exp.* 40 millim.

1858. Cirphis pryeri. (Plate XCI. fig. 31.)

Leucania pryeri, Leech, Trans. Ent. Soc. 1900, p. 128.

♂. Head and thorax pale violaceous grey mixed with some brown; tegulæ with two brown lines; patagia with some fuscous on outer side and a few black scales near upper edge; mid tibiæ with black streak on outer side; abdomen ochreous white, the ventral tufts black. Fore wing pale violaceous grey; the costal and inner areas irrorated with a few black scales; an olive-brown shade from base through the cell and thence obliquely to apex; a black streak below base of cell and an oblique streak above inner margin before middle; the terminal half of median nervure streaked with white, slightly defined by black above and below and slightly hooked on median nervure; the veins of terminal area streaked with white, veins 4 and 3 more prominently; the veins defined by, and the interspaces with, fine dark streaks, those above veins 4, 3, 2 more prominent and black; an oblique whitish fascia from apex to vein 2, the area beyond it rather darker; a terminal series of black points; cilia intersected with white. Hind wing whitish tinged with fuscous, the terminal half darker from costa to vein 2. The underside pinkish white; fore wing with the disk suffused with scattered silvery scales, hind wing with the disk suffused with silver scales, leaving the costal and terminal areas pinkish.

Hab. Japan, Yokohama (*Pryer*), 1 ♂, type. *Exp.* 38 millim.

1859. Cirphis hamifera.

Leucania hamifera, Wlk. Journ. Linn. Soc., Zool. vi. p. 179 (1862); Hmpsn. Moths Ind. ii. p. 270.
Leucania subnitens, Swinh. Trans. Ent. Soc. 1890, p. 218, pl. vii. f. 1.

Head and thorax pale ochreous brown; tegulæ with three dark lines; mid tibiæ with black streak on outer side; abdomen white, with a slight ochreous tinge. Fore wing violaceous white, tinged with ochreous except on costal area; a prominent red-brown shade from base through the cell to apex, at base extending to below the cell; the costal and inner areas slightly irrorated with fuscous; a white streak on terminal half of median nervure, very slightly hooked on discocellulars, veins 4 and 3 also streaked with white; the veins of terminal half defined by slight red-brown streaks, the interspaces also streaked with red-brown; an oblique ochreous shade from apex; a terminal series of black points; the postmedial line sometimes represented by some black points or traces of a dentate line bent outwards below costa, excurved to vein 4, then oblique and angled inwards in submedian fold; cilia intersected with white. Hind wing white, the terminal area tinged with brown from apex to vein 2, extending below the cell to origin of

vein 2. Underside of male with the disk of fore wing and the hind wing except base and inner area suffused with silver; female with the fore wing and costal area of hind wing pale rufous irrorated with brown.

Hab. Burma, Bhamo, 1 ♂ type *subnitens*; Borneo, Sarawak (*Wallace*), 3 ♂, 2 ♀. *Exp.* 42 millim.

*1860. Cirphis cryptargyrea. (Plate XCI. fig. 32.)

Leucania cryptargyrea, Beth.-Baker, A. M. N. H. (7) xv. p. 197 (1905).

♂. Head ochreous mixed with fuscous; tegulæ grey, with three fuscous lines; prothoracic crest grey and fuscous; thorax ochreous tinged with rufous; tegulæ fuscous and purplish on outer edge and with some black scales near upper edge; legs with some fuscous streaks; abdomen ochreous, dorsally tinged with brown, the dorsal crest black at tips, the ventral tufts deep black. Fore wing ochreous tinged with rufous, especially in cell, and irrorated with black chiefly on costal and inner areas: the costal area whitish; antemedial line represented by traces of black points oblique from costa to submedian fold, then with a more prominent point nearer base on vein 1; reniform represented by an indistinct pale lunule; postmedial line represented by a double series of black points connected by traces of a dentate line, bent outwards below costa and oblique below vein 4; a diffused, oblique, pale fascia from apex; a terminal series of black points. Hind wing fuscous, the inner area whitish; cilia white, ochreous at base. Underside of fore wing brilliant silver from before middle to near termen except on costal area, where there is a postmedial fuscous spot; hind wing brilliant silver from before middle to termen except on inner area, some black points on termen.

Hab. Br. New Guinea, Dinawa (*Pratt*), type † ♂ in Coll. Bethune-Baker. *Exp.* 50 millim.

1861. Cirphis decisissima.

Leucania decisissima, Wlk. xxxii. 624 (1865); Butl. Ill. Het. B. M. vi. p. 32, pl. 109. f. 6; Hmpsn. Moths Ind. ii. p. 269.
Leucania nurcia, Feld. Reis. Nov. pl. 109. f. 9 (1874).
Leucania pulchra, Snell. Midd.-Sum., Lep. iv. p. 41, pl. 4. ff. 3, 4 (1880).
Leucania lanceata, Moore, P. Z. S. 1881, p. 340.

Head and thorax rufous mixed with pale ochreous; abdomen ochreous dorsally tinged with brown, the ventral tufts black. Fore wing ochreous; the veins defined by rufous and the interspaces streaked with rufous; subbasal line represented by a black point on costa, the antemedial line by a curved series of points on the veins; a white streak on terminal half of median nervure ending in a small hook on discocellulars, a black point in lower angle of cell and a small fuscous patch beyond the angle; veins 4 and 3 less prominently streaked with white; postmedial line represented by a series of black points on the veins, sometimes conjoined by traces of a crenulate line, bent outwards below costa, excurved to vein 4,

where it is met by an oblique dark shade from apex, then oblique; a terminal series of black points. Hind wing ochreous suffused with fuscous except on basal and costal areas, the cilia ochreous. Underside of male suffused with silver except costal and terminal areas of fore wing and basal and inner areas of hind wing; of female ochreous irrorated with black, fore wing with postmedial

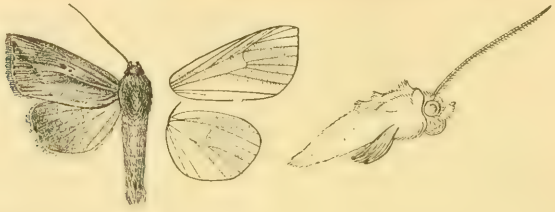


Fig. 157.—*Cirphis decisissima*, ♂. ½. (From Moths Ind. vol. ii.)

black point on costa and curved line diffused outwards and not reaching inner margin, hind wing with postmedial and terminal series of black points.

Hab. Sikhim (*Fotheringham*), 5 ♂ type; Assam; Nilgiris (*Hampson*), 3 ♂; Ceylon, 2 ♂, 2 ♀, type *lanceata*; Burma, Hsipaw (*De Nicéville*), 2 ♂, Tenasserim, Donat Hills (*De Nicéville*), 1 ♂; Andamans; Singapore (*Ridley*), 1 ♂, 1 ♀; Sumatra; Pulo Laut (*Doherty*), 3 ♂, 1 ♀; New Guinea. *Exp.* 34–42 millim.

1862. Cirphis nebulosa. (Plate XCII. fig. 4.)

Leucania nebulosa, Hmpsn. Ann. S. Afr. Mus. ii. p. 274 (1902).

Head and thorax pale ochreous yellow slightly tinged with rufous; tegulæ with two slight dark lines; patagia with a few black scales near upper edge; abdomen ochreous white, the ventral tuft of male black. Fore wing ochreous yellow slightly irrorated with black and with diffused rufous streaks in the interspaces; median nervure with whitish streak; a black point in lower angle of cell usually present, and sometimes a slight black mark beyond the angle; traces of a brown antemedial line angled inwards on median nervure and vein 1; an indistinct brown postmedial line bent outwards below costa and oblique below vein 4, with a series of black points beyond it in the interspaces; a slight oblique dark shade from termen below apex; a terminal series of black points. Hind wing yellowish white, with a pinkish tinge on medial terminal area, the veins crossing it darker. Underside of male suffused with silvery scales except costal and terminal areas of fore wing, a black postmedial point on costa of fore wing beyond middle and a terminal series on both wings.

Hab. Br. E. Africa, Machakos (*Crawshay*), 1 ♀; Germ. E. Africa, Dar-es-Salem, 1 ♂; Cape Colony, Transkei (*Miss F. Barrett*), 1 ♂ type; Mauritius, Curepipe (*Tulloch*), 1 ♂, 1 ♀. *Exp.* 36 millim.

1863. Cirphis congrua.

Noctua congrua, Hübn. Samml. Eur. Schmett., Noct. f. 616 (1827); Herr.-Schäff. Eur. Schmett., Noct. ii. 357, 360; Staud. Cat. Lep. pal. p. 192.
Leucania amnicola, Ramb. Ann. Sci. Obs. 1829, p. 162, pl. 6. f. 5, and Ann. Soc. Ent. Fr. 1832, p. 289, pl. 9. f. 2; Dup. Lép. Fr., Suppl. iii. p. 336, pl. 31. f. 2; Herr.-Schäff. Eur. Schmett., Noct. f. 334.

Head and thorax ochreous with a flesh-coloured tinge and mixed with brown, especially on tegulæ, which have three brown lines; abdomen brownish ochreous, ventrally irrorated with black, the ventral tufts of male black. Fore wing ochreous, sparsely irrorated with black on costal and inner areas; the veins whitish defined by fine brown streaks, the interspaces also with fine brown streaks; the white streak on median nervure expanding into a small spot at lower angle of cell; the postmedial line represented by black points on veins 5 and 2; a terminal series of black points. Hind wing whitish, suffused with fuscous except towards base and costa. Underside of male suffused with silvery-white scales except costal area of both wings and cell of fore wing, some dark points on termen; of female the fore wing and costal area of hind wing pale flesh-colour.

Hab. S. France, Leech Coll.; Spain; Corsica; Italy; Sicily; Dalmatia, Leech Coll.; Armenia; Palestine. *Exp.* 38 millim.

Larva. On Maize.

1864. Cirphis usta. (Plate XCII. fig. 5.)

Leucania usta, Hmpsn. Ann. S. Afr. Mus. ii. p. 274 (1902).

Head and thorax grey mixed with brown, and usually tinged with flesh-colour or rufous; abdomen greyish or pale rufous, the ventral tufts black. Fore wing greyish or flesh-colour irrorated with fuscous; the costal edge whitish; a punctiform fuscous antemedial line angled outwards in submedian fold; a more or less prominent white streak on extremity of median nervure usually continued on vein 4; a black point in lower angle of cell; a slight flesh-coloured discoidal lunule; a punctiform postmedial line or series of points, bent outwards below costa and oblique below vein 4; a more or less prominent oblique flesh-coloured fascia from apex to vein 5, and often a subterminal patch on vein 4; traces of a dark subterminal line angled outwards at vein 7 and excurved at middle; a terminal series of black points; a fine white line at base of cilia. Hind wing semihyaline white, the veins and termen tinged with brown, or the whole terminal half suffused with brown. Underside slightly suffused with silvery scales; hind wing with some fuscous irroration on costal area, usually a postmedial series of dark striæ on the veins and some terminal points.

Hab. Br. E. Africa, Alis (*Betton*), 1 ♂: Natal, Weenen, 1 ♀, Estcourt (*Hutchinson*), 1 ♂, 1 ♀, type; Cape Colony, Transkei (*Miss F. Barrett*), 1 ♂, 2 ♀. *Exp.* 32–36 millim.

1865. Cirphis infrargyrea.

Leucania infrargyrea, Saalm. Lep. Madag. p. 256, f. 158 (1891).

♂. Head and thorax rufous mixed with ochreous, some black scales near upper edge of patagia; abdomen pale rufous, the tufts at base black. Fore wing ochreous, suffused with rufous and irrorated with black, a yellower tinge in and beyond end of cell; traces of an antemedial series of black points oblique from costa to submedian fold, then angled inwards on vein 1; a short white streak on extremity of median nervure, with a black point above it in lower angle of cell; a rather ill-defined double postmedial series of points bent outwards below costa and oblique below vein 4; the subterminal line only defined by the area beyond it being darker, arising from apex, excurved at middle and angled inwards in discal and submedian folds; a terminal series of black points. Hind wing yellowish white, suffused with fuscous except basal and costal areas. Underside suffused with golden silver except costal area of both wings and termen of fore wing, which are whitish irrorated with black; fore wing with postmedial black spot on costa; both wings with terminal series of black points.

♀. Fore wing not irrorated with black, and with the series of points almost obsolete; the underside pinkish irrorated with fuscous.

Hab. Madagascar; Mauritius, Curepipe (*Tulloch*), 2 ♂, 1 ♀. *Exp.* 30 millim.

1866. Cirphis subsignata. (Plate XCII. fig. 6.)

Leucania subsignata, Moore, P. Z. S. 1881, p. 336; Hmpsn. Moths Ind. ii. p. 272.

Head and thorax ochreous tinged with rufous; abdomen reddish ochreous, ventrally irrorated with black, the tufts of male black. Fore wing ochreous, suffused with rufous and sparsely irrorated with black; some antemedial black points with traces of a waved line between them, excurved in and below cell and angled inwards on vein 1; orbicular and reniform indistinct, ochreous, the former with central dark point, the latter with point in lower part and a small fuscous patch beyond it; a postmedial series of black points bent outwards below costa and oblique below vein 4, connected by traces of a highly crenulate line; a slight, oblique, dark shade from termen below apex; a terminal series of black points. Hind wing pale yellowish suffused with fuscous except basal, inner, and costal areas. Underside of both wings of male pale rufous, with a slight silvery gloss except on costal area of both wings, which are irrorated with brown, fore wing with a black postmedial point on costa: of female without the silvery gloss, a curved postmedial series of points on hind wing.

Hab. Punjab, 2 ♂, 1 ♀, type, Kulu, Sultanpore (*G. Young*), 2 ♂, 5 ♀, Simla (*Harford*), 1 ♂, 1 ♀. *Exp.* 30 millim.

1867. Cirphis simplex. (Plate XCII. fig. 7.)

Leucania simplex, Leech, Trans. Ent. Soc. 1889, p. 130.

Head, thorax, and abdomen ochreous tinged with rufous, the last with the ventral tufts of male black. Fore wing ochreous suffused with rufous, and irrorated with a very few black scales; the antemedial line represented by dark points on median nervure and vein 1; a slight pale point at lower angle of cell, and a dark shade beyond the angle connected with a triangular shade from termen below apex; a curved postmedial series of black points on the veins. Hind wing ochreous whitish, suffused with fuscous brown except on basal, costal, and inner areas. Underside of male suffused with silvery scales except costal area of fore wing, a black postmedial point on costa of fore wing and a terminal series on hind wing; female ochreous white irrorated with brown, some fuscous suffusion on veins of fore wing beyond middle.

Hab. C. China, Chang-Yang (*Pratt*), 1 ♂ type, Kiukiang (*Pratt*), 1 ♀, Ship-y-shan, 1 ♂; Assam, Khásis, 1 ♂. *Exp.* 32–38 millim.

b^4. Underside of wings of male not clothed with silvery scales.
  a^5. Fore wing with dark streaks in the interspaces of terminal area.
    a^6. Fore wing with the white streak on median nervure hooked on discocellulars.
      a^7. Fore wing with the streak on median nervure short and strongly hooked... *proxima*.
      b^7. Fore wing with the streak on median nervure long and slightly hooked.
        a^8. Fore wing with oblique pale fascia between veins 5 and 2 beyond the fascia from apex ..... *l-album*.
        b^8. Fore wing without pale fascia between veins 5 and 2 beyond the fascia from apex ..... *albivenata*.
    b^6. Fore wing with the white streak on median nervure not hooked on discocellulars.
      a^7. Fore wing with the ground-colour purplish pink.
        a^8. Fore wing with pale streak in lower part of cell ..... *rufipennis*.
        b^8. Fore wing without pale streak in lower part of cell ..... *duplicata*.
      b^7. Fore wing with the ground-colour greyish.
        a^8. Fore wing with the costal area pale defined by brown below.
          a^9. Hind wing suffused with fuscous. *albicosta*.
          b^9. Hind wing white ..... *polymicha*.
        b^8. Fore wing with the costal area concolorous ..... *simplex*.

b^5. Fore wing without dark streaks in interspaces of terminal area.
a^6. Fore wing with the cilia not pink.
a^7. Fore wing slightly irrorated with black ..... *circulus.*
b^7. Fore wing very strongly irrorated with black ..... *flavostigma.*
b^6. Fore wing with the cilia pink ..... *inornata.*

1868. Cirphis proxima. (Plate XCII. fig. 8.)

Leucania proxima, Leech, Trans. Ent. Soc. 1900, p. 124.

♀. Head and thorax pale brown mixed with grey; palpi blackish at sides; tegulæ with three dark lines; patagia with some blackish on outer side and some black scales near upper edge; abdomen ochreous brown. Fore wing ochreous brown sparsely irrorated with black; a black streak below basal half of cell traversing a pale patch except towards base; an oblique black streak above inner margin before middle; antemedial line ill-defined, irregular, oblique from costa to submedian fold, then angled inwards on vein 1; a short white streak on end of median nervure, prominently hooked on discocellulars; the veins of terminal area streaked with white, veins 4 and 3 more prominently; postmedial line bent outwards below costa, then indistinct, dentate, oblique below vein 4 and angled inwards in submedian fold, where it is connected with the antemedial line by a blackish streak; an oblique pale fascia from apex to vein 2, with short black streaks before it towards costa and beyond it at middle, the area beyond it darker, with dentate ochreous marks defined by black on veins 4 and 3; a terminal series of black points; cilia brown, with fine ochreous line at base. Hind wing pale, nearly uniformly suffused with brown, the cilia whitish, with brown line through them; the underside white irrorated with fuscous, a discoidal point, postmedial series of short streaks on the veins, and terminal series of points.

Hab. W. China, Ni-tou, 1 ♀, type. *Exp.* 38 millim.

1869. Cirphis l-album.

Noctua l-album, Linn. Syst. Nat. xii. p. 850 (1767); Esp. Schmett. iv. pl. 90. f. 4; Hübn. Eur. Schmett., Noct. f. 227; Dup. Lép. Fr. vii. p. 70, pl. 105. f. 2; Hmpsn. Moths Ind. ii. p. 270; Staud. Cat. Lep. pal. p. 192.
Leucania bistrigata, Moore, P. Z. S. 1881, p. 334.
Leucania penicillata, Moore, P. Z. S. 1881, p. 335.

Head and thorax ochreous slightly tinged with olive and mixed with fuscous; frons with dark bar; tegulæ with three dark lines; patagia with some black scales near upper edge; abdomen ochreous, dorsally tinged and ventrally irrorated with fuscous, a sublateral series of black spots, the ventral tufts of male black. Fore wing ochreous largely suffused with olive-brown, especially from base through the cell and thence obliquely to apex and on terminal area; the costal and inner areas irrorated with black; a black

streak below base of cell and an oblique streak on inner area before middle; a prominent white streak on terminal part of median nervure, hooked on discocellulars; the veins of outer area streaked with white and defined by fine brown streaks, veins 4 and 3 more prominently white; an oblique fascia from apex to vein 2, ochreous to vein 5, then whiter with slight black streaks before it above vein 6, then crossing it and extending to an oblique ochreous bar from below vein 5 to vein 2; a terminal series of black points; cilia whitish, with three brown lines through them; the antemedial line sometimes represented by an oblique series of points on costa, below cell and in submedian fold, then one nearer base on vein 1; the postmedial line often represented by a portion bent outwards below costa, then by an obliquely curved series of points, incurved in submedian fold. Hind wing ochreous more or less suffused with fuscous brown, the veins brown; the cilia white, with a brownish line through them; the underside white, the costal and terminal areas irrorated with brown, a slight discoidal point, postmedial and terminal series.

Hab. France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Hungary, Leech Coll.; Switzerland, Frey Coll.; Italy, Capri (*C. S. Browne*); Algeria; W. & C. Asia; Punjab, Kulu, Sultanpore (*G. Young*), 2 ♂, Simla (*Swinhoe*, *Harford*), 2 ♂, 1 ♀, type *penicillata*, Dalhousie, 1 ♀, Thundiani (*Yerbury*), 2 ♂, 1 ♀, Dharmsála (*Hocking*), 3 ♂, 3 ♀; Sikhim (*Lidderdale*), 1 ♀. *Exp.* 36–40 millim.

Larva. Kirby, Eur. Butt. & Moths, p. 162.

Flesh-coloured, with a double dark dorsal line and two dark green lateral stripes on each side. Food-plants, Grasses. Spring and July.

1870. **Cirphis albivenata.** (Plate XCII. fig. 9.)

Leucania albivenata, Swinh. Trans. Ent. Soc. 1890, p. 217, pl. 7. f. 7; Hmpsn. Moths Ind. ii. p. 279.

♂. Head and thorax violaceous grey tinged with red-brown; palpi fuscous; sides of frons with black bar; tegulæ with three brown lines; patagia with a few black scales near upper edge; mid and hind tibiæ and tarsi streaked with black; abdomen grey, dorsally tinged with fuscous, the anal tuft and ventral surface with ochreous, the abdominal tufts grey and fuscous. Fore wing purplish grey, the costal and inner areas irrorated with fuscous, the costal edge brown; a black streak on base of median nervure and an oblique streak above inner margin before middle; a brown shade through the cell and thence obliquely to apex, leaving a fine white streak in lower part of cell; the costal nervure and veins arising from it, the median nervure and veins 4, 3 streaked with white defined by fine dark streaks, the interspaces with fine streaks, more prominent and blackish above veins 4, 3, 2; an oblique pale fascia from apex to vein 3, the area beyond it rather darker; a terminal series of black points; cilia intersected with white. Hind wing

whitish tinged with fuscous, especially on veins and towards termen; cilia whitish; the underside violaceous white, the costal and terminal areas irrorated with fuscous, a discoidal spot, postmedial series of short streaks on the veins, and terminal series of points.

♀ much more tinged with red-brown.

Hab. Sikhim, 1800 feet (*Dudgeon*), 2 ♂; Assam, Naga Hills (*Doherty*), 1 ♀; Burma, Bhamo, 1 ♀ type. *Exp.* 32–34 millim.

*1871. Cirphis rufipennis. (Plate XCII. fig. 10.)

Leucania rufipennis, Hmpsn. Moths Ind. ii. p. 276 (1894).

♂. Head and thorax bright pinkish red; palpi and frons at sides red-brown; tegulæ with three dark lines; abdomen dark brown, the sublateral tufts brown, the anal tuft yellowish. Fore wing purplish pink, the cell and area just below it redder; the costal area pale towards base; the veins finely streaked with yellowish white, the median nervure except towards base and veins 4, 3 more prominently streaked; a pale streak in lower part of cell; an oblique pale fascia from apex to vein 3; antemedial line represented by a black point in submedian fold, the postmedial line by traces of a series of points most distinct on costa and vein 2. Hind wing brown, the cilia with a pale line at base. Underside of fore wing blackish, the marginal areas pinkish irrorated with black; hind wing pale tinged with brown-pink and irrorated with black, a discoidal spot, postmedial series of points on the veins, and some points on termen.

Hab. Manipur, Mão, 7000 feet (*Doherty*), type † ♂ in Coll. Elwes. *Exp.* 36 millim.

1872. Cirphis duplicata. (Plate XCII. fig. 11.)

Leucania prominens, Moore, P. Z. S. 1881, p. 339 (nec Wlk.); Hmpsn. Moths Ind. ii. p. 279.
Leucania duplicata, Butl. Ill. Het. B. M. vii. p. 8 (1889).
Leucania rufula, Hmpsn. Moths Ind. ii. p. 278 (1894).

Head and thorax whitish tinged with purplish pink, especially on thorax; sides of palpi and frons brown; tegulæ with three brown lines; abdomen pinkish, dorsally tinged with fuscous, the abdominal tufts of male grey and fuscous. Fore wing pale pink; a red-brown shade from base in and below cell and thence obliquely to apex; a brown streak on each side of vein 1 except towards base; an oblique dark streak above inner margin before middle; the veins streaked with white, defined on each side by slight brown streaks except on costal area; the median nervure, except towards base and veins 4, 3, with more prominent streaks; an oblique pale pink fascia from apex to vein 2, the area beyond it browner; the subbasal line represented by obliquely placed black points below costa and in submedian fold; the postmedial line represented by some black points, bent outwards below costa and oblique below vein 4;

a terminal series of black points usually present. Hind wing fuscous brown; the cilia pale rufous, whitish at tips. Underside of fore wing fuscous, with the costal and terminal areas pinkish; hind wing pinkish irrorated with black, a discoidal spot, postmedial series of slight streaks on the veins, and terminal series of points.

Hab. Punjab, Kulu, Sultanpore (*G. Young*), 1 ♀, Dharmsála (*Hocking*), 2 ♂, 5 ♀, type *duplicata*; Sikhim (*Lidderdale*), 2 ♂ type *prominens*; Assam, Khásis, 4 ♂, 1 ♀, type *rufula*. *Exp.* 32–42 millim.

1873. **Cirphis albicosta.** (Plate XCII. fig. 12.)

Leucania albicosta, Moore, P. Z. S. 1881, p. 338, pl. 37. f. 10; Hmpsn. Moths Ind. ii. p. 279.
Leucania nigrilineosa, Moore, Lep. Atk. p. 103 (1882).

Head, thorax, and abdomen grey-white mixed with brown and very slightly tinged with purple; tegulæ with two brown lines; abdominal tufts of male grey and fuscous. Fore wing pale grey with a slight purplish tinge; a reddish-brown shade from base in and below cell and thence obliquely to apex; a slight dark streak below base of cell and an oblique streak above inner margin before middle; the veins streaked with white and defined by fine brown streaks, the interspaces of terminal area also with dark streaks, the median nervure except towards base and veins 4, 3 more prominently white; the antemedial line represented by slight obliquely-placed black points below costa and in submedian fold, the postmedial line by some black points bent outwards below costa and oblique below vein 4; an oblique pale fascia from apex to vein 2, the area beyond it browner; a terminal series of black points. Hind wing whitish tinged with brown, especially on veins and terminal half; the cilia whitish; the underside pale, slightly tinged with purplish and irrorated with black, a small discoidal spot, postmedial series of slight streaks on the veins, and terminal series of points.

Ab. 1. Fore wing more uniformly suffused with red-brown, the pale fascia from apex slighter.

Hab. Japan, Oiwake (*Pryer*), 1 ♀; W. China, Washan (*Pratt*), 1 ♂; Kashmir, Narkundah (*McArthur*), 1 ♀; Punjab, Kulu, Sultanpore (*G. Young*), 1 ♂, 1 ♀, Simla (*Harford*), 3 ♀, Dalhousie (*Harford*), 1 ♂, 1 ♀, Dharmsála (*Hocking*), 6 ♂, 4 ♀, type; Sikhim Tibet, Yatong (*Hobson*), 1 ♀; Sikhim; Bhutan. *Exp.* 36–40 millim.

1874. **Cirphis polyrabda**, n. sp. (Plate XCII. fig. 13.)

Leucania albicosta, Hmpsn. Ann. S. Afr. Mus. ii. p. 273 (1902), nec Moore.

♂. Head and thorax grey-white mixed with brown and with a very slight purplish tinge; palpi brown at sides; tegulæ with three dark lines; mid and hind tibiæ and tarsi streaked with brown; abdomen grey mixed with brown, the ventral surface fuscous, the

abdominal tufts grey and black. Fore wing grey-white with a slight purplish tinge; a brown shade in and below cell and thence obliquely to apex; the veins white defined by fine dark streaks, the interspaces of terminal area also with dark streaks, the median nervure except towards base and veins 4, 3 more prominently white; an oblique dark streak above inner margin before middle; the antemedial line represented by obliquely-placed black points below costa and in submedian fold, the postmedial line by some points bent outwards below costa and oblique below vein 4; an oblique pale fascia from apex to vein 2, the area beyond it rather browner; a terminal series of black points; cilia intersected with white. Hind wing pure white, the veins and termen slightly tinged with brown; the underside with the costal area irrorated with brown, a postmedial series of slight streaks on the veins and a terminal series of points.

Hab. Natal, Estcourt (*Hutchinson*), 1 ♂ type. *Exp.* 38 millim.

1875. Cirphis micacea.

Leucania micacea, Hmpsn. Ill. Het. B. M. viii. p. 67, pl. 144. f. 8 (1891); id. Moths Ind. ii. p. 279.

Head and thorax grey-white with a slight purplish tinge: tegulæ with three brown lines; abdomen ochreous white mixed with brown, the ventral tufts of male brownish and fuscous. Fore wing whitish with a slight purplish tinge; the veins white defined by fine dark streaks, the interspaces of terminal half also with dark streaks, the median nervure except towards base and veins 4, 3 more prominently white; an oblique dark streak above inner margin before middle; the antemedial line represented by obliquely-placed black points below costa and in submedian fold and one nearer base on vein 1, the postmedial line by some points bent outwards below costa and oblique below vein 4; an oblique pale fascia from apex to vein 2, the area beyond it rather browner; a terminal series of black points, the cilia intersected with white. Hind wing semi-hyaline white, the veins and terminal area tinged with brown; the underside with the costal and terminal areas irrorated with fuscous, a postmedial series of slight streaks and terminal series of points.

The Ceylon form has the thorax and fore wing more suffused with red-brown, the latter especially in and below cell and thence obliquely to apex.

Hab. Bombay, Mahableshwar (*Swinhoe*), 1 ♀; Madras, Nilgiris (*Hampson*), 2 ♂ type; Ceylon, Dickoya (*Green*, *Fairlie*), 1 ♂, 1 ♀. *Exp.* 30 millim.

*1876. Cirphis circulus.

Leucania circulus, Saalm. Ber. Senck. Ges. 1880, p. 268; id. Lep. Madag. p. 260, f. 102.

♀. Head and thorax ochreous, tinged with rufous and with a few

black scales on patagia; tegulæ with dark medial line; abdomen ochreous, dorsally tinged with fuscous. Fore wing ochreous, tinged with rufous especially beyond end of cell and slightly irrorated with black scales; a prominent black point in lower angle of cell, with small dentate fuscous mark beyond the angle; a curved postmedial series of black points and a terminal series. Hind wing fuscous, the cilia reddish ochreous. Underside of fore wing with the cell and area just below and beyond it to postmedial series of points suffused with fuscous; hind wing ochreous irrorated with fuscous, and with some black points on termen.

Hab. Madagascar, in Coll. de Joannis. *Exp.* 22–30 millim.

According to Saalmüller the male has the hind wing fuscous and the female whitish, the former with abdominal tufts.

1877. Cirphis flavostigma.

Xanthia flavostigma, Brem. Lep. Ost-Sib. p. 52, pl. 5. f. 11 (1864); Staud. Cat. Lep. pal. p. 193.

Leucania singularis, Butl. A. M. N. H. (5) i. p. 80 (1878); id. Ill. Het. B. M. ii. p. 22, pl. 28. f. 11.

Head and thorax pale ochreous tinged with rufous and mixed with fuscous; some black scales near upper edge of patagia; abdomen ochreous dorsally tinged with fuscous, the ventral tufts of male black. Fore wing pale ochreous, more or less tinged with rufous, especially in, below, and beyond end of cell, and irrorated with black; a black point at base; an antemedial series of black points connected by an obsolescent dentate line, oblique from costa to submedian fold, then angled inwards on vein 1; orbicular and reniform indistinct, yellowish, the latter with black point in lower angle of cell and whitish streak on extremity of median nervure, some fuscous suffusion above and below extremity of median nervure, thence curved upwards to termen below apex; a postmedial series of black points connected by a crenulate brownish line, bent outwards below costa and oblique below vein 4; traces of a subterminal line excurved at middle and angled inwards at discal and submedian folds; a terminal series of black points. Hind wing ochreous yellow, suffused with fuscous except on costal area; the underside glossy yellowish white, the costal area slightly irrorated with fuscous, a discoidal point, postmedial series of short streaks on the veins, and terminal series of points.

The typical form from the Amur has the ground-colour of fore wing white, the markings more ferruginous and contrasting; hind wing with more whitish on costal and inner areas.

Hab. Amurland, Ussuri; Japan, Hakodate, 1 ♀, Yokohama (*Jonas*, *Pryer*, *Manley*), 4 ♂, 5 ♀, type *singularis*; Corea, Gensan (*Leech*), 1 ♂; C. China, Kiukiang (*Pratt*), 1 ♀; Kashmir, Goorais Valley (*Leech*), 1 ♀. *Exp.* 36–42 millim.

1878. Cirphis inornata.

Leucania flavostigma, var. *inornata*, Leech, P. Z. S. 1889, p. 482, pl. 50. f. 7.

Head, thorax, and abdomen ochreous, the last with the tufts of male black. Fore wing ochreous, sparsely irrorated with black; a short indistinct whitish streak on extremity of median nervure, with black point above it in lower angle of cell; an indistinct postmedial series of black points, oblique below vein 4; a slight oblique brown shade from termen below apex; a terminal series of black points; cilia pink. Hind wing ochreous suffused with deep fuscous, the inner area rather paler; cilia pink. Underside of fore wing whitish, with some fuscous suffusion in, below, and beyond cell, a terminal series of points; hind wing ochreous whitish, with some pink suffusion on costa and terminal series of points.

Hab. Japan, Gifu (*Pryer*), 1 ♂ type, Yokohama (*Pryer*, *Manley*), 2 ♀. *Exp.* 36–40 millim.

b^2. Abdomen of male normal.
a^3. Fore wing of male on underside with fringe of long hair and scales on vein 1.

1879. Cirphis tangala.

Leucania tangala, Feld. Reis. Nov. pl. 109. f. 12 (1874); Hmpsn. Moths Ind. ii. p. 280.
Leucania mediofusca, Hmpsn. Ill. Het. B. M. viii. p. 68, pl. 144. f. 9 (1891).

♂. Head and thorax ochreous mixed with rufous, tegulæ with ochreous line near tips; abdomen ochreous tinged with rufous. Fore wing ochreous tinged with rufous, the costal and inner areas irrorated with a few dark scales; the veins pale, defined by fine rufous

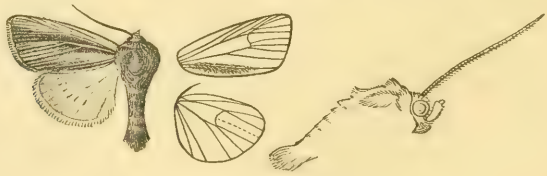


Fig. 158.—*Cirphis tangala*, ♂. ½.

streaks, the interspaces of terminal half streaked with rufous; median nervure and veins 3, 4 more prominently streaked with white; a rufous fascia above and below median nervure, continued above vein 4 to termen, towards which it expands somewhat; an oblique dark streak above inner margin before middle, and some rufous suffusion on inner area towards tornus; postmedial black points on veins 6, 5, 3, 2. Hind wing pale ochreous tinged with rufous, slight postmedial dark points on veins 6, 4, 3, 2; the underside with the costal area suffused with rufous.

Ab. 1. *mediofusca*. Fore wing with the median fascia and other markings more fuscous; hind wing paler, without postmedial dark points.

Hab. MADRAS, Nilgiris (*Hampson*), 1 ♂ type *mediofusca*; CEYLON, Pundaloya (*Green*), 1 ♂. *Exp.* 32 millim.

b^3. Fore wing of male on underside without fringe of hair and scales on vein 1.
a^4. Fore wing with short whitish streak on extremity of median nervure.
a^5. Hind wing almost uniformly suffused with fuscous.
a^6. Fore wing with dark streaks in the interspaces of terminal area.
a^7. Fore wing with the white streak on median nervure hooked on discocellulars.
a^8. Fore wing with black point in lower angle of cell.
a^9. Fore wing not suffused with rufous ..... *goniosigma.*
b^9. Fore wing suffused with rufous ..... *dharma.*
b^8. Fore wing without black point in lower angle of cell ..... *rufistrigosa.*
b^7. Fore wing with the white streak on median nervure not hooked on discocellulars ..... *salebrosa.*
b^6. Fore wing without dark streaks in the interspaces of terminal area ..... *ignita.*
b^5. Hind wing pure white ..... *pyrastis.*
c^5. Hind wing whitish tinged with ochreous.
a^6. Fore wing without black streak below base of cell. *formosana.*
b^6. Fore wing with black streak below base of cell.
a^7. Fore wing tinged with pink ..... *clarescens.*
b^7. Fore wing not tinged with pink ..... *imperfecta.*
b^4. Fore wing with the median nervure finely streaked with white.
a^5. Fore wing with dark streaks in the interspaces of terminal area.
a^6. Fore wing with black streak in base of submedian fold.
a^7. Hind wing uniformly suffused with brown ... *velutina.*
b^7. Hind wing whitish, the veins and terminal area more or less strongly suffused with brown.
a^8. Fore wing with short black streaks above veins 3, 4, 5 ..... *comma.*
b^8. Fore wing without black streaks above veins 3, 4, 5.
a^9. Fore wing with the costal and inner areas not pale yellow.
a^{10}. Fore wing tinged with rufous ..... *insueta.*
b^{10}. Fore wing not tinged with rufous.
a^{11}. Fore wing with the median nervure and vein 4 finely streaked with white ..... *dia.*
b^{11}. Fore wing with the median nervure and vein 4 broad streaked with white ..... *diagramma.*
b^9. Fore wing with the costal and inner areas pale yellow ..... *bifasciata.*
c^7. Hind wing ochreous white.
a^8. Fore wing with small black patch beyond lower angle of cell ..... *atrinota.*
b^8. Fore wing without black patch beyond lower angle of cell ..... *roseilinea.*

d^7. Hind wing pure white ..... *polemusa.*
b^6. Fore wing without black streak in base of submedian fold.
a^7. Fore wing with distinct blackish shade below median nervure.
a^8. Hind wing of male pale yellow..... *secta.*
b^8. Hind wing whitish.
a^9. Head and thorax rufous ..... *albifasciata.*
b^9. Head and thorax ochreous.
a^{10}. Fore wing with short dark streak from lower angle of cell to the oblique pale fascia from apex ..... *abdominalis.*
b^{10}. Fore wing with the dark shade from termen extending to lower angle of cell.
a^{11}. Fore wing with vein 4 more prominently streaked with white ..... *lineatipes.*
b^{11}. Fore wing with all the veins white defined by fine brown streaks.
a^{12}. Hind wing ochreous white, the terminal area strongly tinged with brown ..... *anteroclara.*
b^{12}. Hind wing pure white, the terminal area not tinged with brown ..... *oregona.*
b^7. Fore wing without distinct blackish shade below median nervure.
a^8. Fore wing with very prominent dark streaks in the interspaces.
a^9. Fore wing with two postmedial series of black points ..... *polysticha.*
b^9. Fore wing with one postmedial series of black points ..... *rivorum.*
b^8. Fore wing with the dark streaks in the interspaces less prominent.
a^9. Fore wing with the ground-colour pinkish rufous.
a^{10}. Hind wing pure white ..... *sarcistis.*
b^{10}. Hind wing with the termen tinged with brown ..... *calgariana.*
c^{10}. Hind wing uniform fuscous ..... *sarcophæa.*
b^9. Fore wing with the ground-colour ochreous or greyish.
a^{10}. Fore wing with the oblique shade from termen dark brown and prominent ..... *jaliscana.*
b^{10}. Fore wing with the oblique shade from termen slight.
a^{11}. Hind wing with the termen slightly tinged with brown.
a^{12}. Fore wing with the postmedial line reduced to points.
a^{13}. Fore wing without small fuscous patch beyond lower angle of cell.
a^{14}. Fore wing with the ground-colour greyish.
a^{15}. Fore wing strongly tinged with rufous ..... *polystrota.*
b^{15}. Fore wing hardly tinged with rufous. *microsticha.*
b^{14}. Fore wing with the ground-colour ochreous.
a^{15}. Fore wing whitish ochreous ..... *palliseca.*
b^{15}. Fore wing deeper ochreous.
a^{16}. Tegulæ with three dark lines ..... *humidicola.*
b^{16}. Tegulæ with two dark lines ..... *insulicola.*

b^{13}. Fore wing with small dark patch beyond lower angle of cell ..... *compta.*
b^{12}. Fore wing with the postmedial line waved ..... *megaproctis.*
b^{11}. Hind wing with the terminal half suffused with brown.
a^{12}. Fore wing with the ground-colour ochreous.
a^{13}. Fore wing with the white streak on median nervure not expanding into a hook at lower angle of cell ..... *juncicola.*
b^{13}. Fore wing with the white streak on median nervure expanding into a small hook at lower angle of cell..... *microgonia.*
b^{12}. Fore wing with the ground-colour greyish.
a^{13}. Fore wing with the white streak on median nervure not expanding into a spot at lower angle of cell.
a^{14}. Fore wing with oblique pale fascia from apex ..... *riparia.*
b^{14}. Fore wing without pale fascia from apex..... *deserticola.*
b^{13}. Fore wing with the white streak on median nervure expanding into a small spot at lower angle of cell ..... *insecuta.*
c^{11}. Hind wing wholly suffused with brown... *postica.*
b^5. Fore wing without dark streaks in the interspaces of terminal area.
a^6. Hind wing uniformly suffused with brown.
a^7. Fore wing with brown orbicular stigma..... *sinuosa.*
b^7. Fore wing without orbicular stigma.
a^8. Fore wing with black streak below base of cell.
a^9. Fore wing without white fasciæ above and below vein 6.
a^{10}. Fore wing irrorated with black, a prominent terminal series of black spots ... *andereggi.*
b^{10}. Fore wing not irrorated with black, a terminal series of black points ..... *lineata.*
b^9. Fore wing with white fasciæ above and below vein 6 ..... *alboradiata.*
b^8. Fore wing without black streak below base of cell ..... *phlebitis.*
b^6. Hind wing white.
a^7. Fore wing with the veins defined by prominent fuscous streaks ..... *jordana.*
b^7. Fore wing with the veins defined by fine brown streaks ..... *sicula.*
c^7. Fore wing with the veins not defined by dark streaks ..... *alopecuri.*
c^4. Fore wing with white point at lower angle of cell.
a^5. Fore wing with dark streaks in the interspaces of terminal area.
d^6. Fore wing with black streak below base of cell.
a^7. Fore wing more or less completely suffused with fuscous..... *irregularis.*
b^7. Fore wing not suffused with fuscous.
a^8. Fore wing with well-defined blackish fascia on median nervure ..... *cinereicollis.*
b^8. Fore wing with some diffused fuscous on median nervure.

a^6. Fore wing with the postmedial line reduced to points.
a^{10}. Fore wing with the black streak below cell slight ..... *punctosa.*
b^{10}. Fore wing with the black streak below the cell distinct ..... *putrescens.*
b^9. Fore wing with the postmedial line entire, dentate ..... *herrichi.*
b^6. Fore wing without black streak below base of cell.
a^7. Fore wing thickly irrorated with black ..... *phœa.*
b^7. Fore wing not thickly irrorated with black.
a^8. Fore wing with the veins streaked with white.
a^9. Genital tufts of male brownish ..... *leucosticha.*
b^9. Genital tufts of male yellow ..... *latiuscula.*
b^8. Fore wing with the veins not streaked with white ..... *tritonia.*
b^5. Fore wing without dark streaks in the interspaces of terminal area.
a^6. Fore wing with the reniform absent.
a^7. Hind wing white, the terminal area more or less suffused with fuscous.
a^8. Fore wing with small black patch beyond lower angle of cell ..... *atrimacula.*
b^8. Fore wing without black patch beyond lower angle of cell.
a^9. Fore wing with slight black streak below base of cell ..... *albistigma.*
b^9. Fore wing without black streak below base of cell.
a^{10}. Fore wing with more or less developed fuscous fascia above or below median nervure ..... *putrida.*
b^{10}. Fore wing without fuscous fascia above or below median nervure.
a^{11}. Fore wing without black point in lower angle of cell ..... *zeæ.*
b^{11}. Fore wing with black point in lower angle of cell ..... *scirpi.*
b^7. Hind wing nearly uniformly suffused with fuscous.
a^8. Fore wing with black point in lower angle of cell ..... *scirpi*, var. [*montium.*
b^8. Fore wing without black point in lower angle of cell.
a^9. Fore wing with the costal edge white ..... *ciliata.*
b^9. Fore wing with the costal edge not white.
a^{10}. Fore wing without series of short black streaks beyond postmedial line.
a^{11}. Fore wing with the postmedial line slightly incurved at discal fold ..... *fragilis.*
b^{11}. Fore wing with the postmedial line not incurved at discal fold.
a^{12}. Fore wing not tinged with rufous ..... *opaca.*
b^{12}. Fore wing tinged with rufous ..... *crenulata.*
b^{10}. Fore wing with series of short black streaks beyond postmedial line ..... *mesotrosta.*
b^6. Fore wing with the reniform represented by a pale patch.
a^7. Fore wing with oblique dark streak from apex. *unipuncta.*
b^7. Fore wing without oblique dark streak from apex ..... *corrugata.*

d^4. Fore wing without white point at lower angle of cell or streak on median nervure.
a^5. Hind wing more or less uniformly suffused with brown.
a^6. Fore wing with the orbicular represented by two black points, the reniform by four black points. *arcupunctata.*
b^6. Fore wing with the orbicular represented by a dark spot.
a^7. Fore wing with the reniform represented by a dark spot.
a^8. Fore wing without brown fascia beyond lower angle of cell ..... *denticula.*
b^8. Fore wing with brown fascia beyond lower angle of cell ..... *pastea.*
b^7. Fore wing with the reniform absent ..... *ys.*
c^6. Fore wing with the orbicular absent or pale.
a^7. Hind wing whitish suffused with brown.
a^8. Fore wing with the reniform represented by a pale patch ..... *semivitrea.*
b^8. Fore wing with the reniform absent..... *modesta.*
b^7. Hind wing uniform fuscous.
a^8. Fore wing without rufous streak on median nervure.
a^9. Hind wing on underside with fuscous suffusion on inner half of wing ..... *metaphæa.*
b^9. Hind wing on underside without fuscous suffusion on inner half of wing.
a^{10}. Fore wing without black subbasal point on costa..... *placida.*
b^{10}. Fore wing with black subbasal point on costa ..... *hypophæa.*
b^8. Fore wing with rufous streak on median nervure ..... *rubricata.*
b^5. Hind wing white, the terminal area more or less tinged with brown.
a^6. Fore wing with the orbicular and reniform absent.
a^7. Fore wing without black streak below base of cell.
a^8. Fore wing with small red patch beyond end of cell ..... *brantsi.*
b^8. Fore wing without small red patch beyond end of cell ..... *inconspicua.*
b^7. Fore wing with black streak below base of cell.
a^8 Fore wing not suffused with grey-brown.
a^9. Fore wing without triangular dark shade from termen below apex..... *mocoides.*
b^9. Fore wing with triangular dark shade from termen below apex ..... *falclandica.*
b^8. Fore wing mostly suffused with grey-brown . *remota.*
b^6. Fore wing with the orbicular and reniform present ..... *quadrannulata.*

1880. **Cirphis goniosigma**, n. sp. (Plate XCII. fig. 14.)

♂. Head and thorax ochreous mixed with reddish brown and black; tegulæ with black line near tips; abdomen with large ochreous genital tufts. Fore wing pale ochreous; a reddish and black shade on median nervure and in cell from base to postmedial line, at base extending to vein 1; a black point at base of costa;

the antemedial line represented by a black striga from costa, a streak on subcostal nervure, and an obsolescent line towards inner margin, angled inwards on vein 1; a prominent white ⊿-mark on extremity of median nervure; postmedial line represented by some black points on the veins, bent outwards below costa, then obliquely curved to middle of inner margin, another series of points beyond it, arising from the same point at vein 7, angled at vein 4, then oblique, and joined at vein 4 by a brown and black shade from termen below apex; the terminal area with brownish streaks in the interspaces and white streaks on the veins; a terminal series of small black lunules; cilia chequered black and white. Hind wing fuscous, ochreous towards base and inner margin; the cilia ochreous; the underside ochreous, irrorated with black and suffused near the curved black postmedial line.

Hab. Ceylon, W. Haputale (*Mackwood*), 1 ♂ type. *Exp.* 34 millim.

1881. Cirphis dharma. (Plate XCII. fig. 15.)

Leucania dharma, Moore, P. Z. S. 1881, p. 338, pl. 37. f. 17; Hmpsn. Moths Ind. ii. p. 270.
Leucania rufescens, Moore, Lep. Atk. p. 102 (1882).

Head and thorax ochreous mixed with bright rufous; sides of palpi and frons tinged with fuscous; tegulæ with dark lines near base and extremity; patagia with some black scales near upper edge; abdomen ochreous dorsally tinged with brown. Fore wing ochreous, more or less suffused with rufous except on costal and inner areas, which are irrorated with black; the veins defined by rufous streaks and the interspaces streaked with rufous; a subbasal black point on costa; the antemedial line represented by black points on costa, below cell, in submedian fold, and on vein 1, oblique from costa to submedian fold; the median nervure streaked with fuscous, a white streak on its extremity slightly hooked on discocellulars, with a black point before it in lower angle of cell and a small black patch beyond it; veins 4, 3 slightly streaked with white; traces of a highly crenulate postmedial line produced to a prominent series of black points on the veins, bent outwards below costa, and oblique below vein 4, where it is met by an oblique shade from termen just below apex; a terminal series of black points. Hind wing ochreous suffused with fuscous except base and costal area; the cilia ochreous; the underside ochreous, the costal and terminal areas irrorated with black, a discoidal lunule, indistinct sinuous postmedial line, with series of short streaks on the veins and terminal series of points.

Hab. Punjab, Dharmsála (*Hocking*), 1 ♂, 2 ♀; Sikhim (*Lidderdale, Elwes*), 3 ♂, 2 ♀, type *rufescens*; Andamans, 1 ♀. *Exp.* 40 millim.

1882. Cirphis rufistrigosa. (Plate XCII. fig. 16.)

Leucania rufistrigosa, Moore, P. Z. S. 1881, p. 337; Hmpsn. Moths Ind. ii. p. 270.

Head and thorax ochreous tinged with rufous; the tegulæ

whitish and grey except at tips, and the patagia whitish and grey on outer edge and with some black scales near upper edge; abdomen ochreous irrorated with fuscous. Fore wing ochreous, the cell and area just below and beyond it suffused with bright rufous and thence obliquely to apex; the costal and inner areas sparsely irrorated with black; the veins beyond and below cell defined by rufous streaks, the interspaces also streaked with rufous; the subbasal line represented by a black point on costa, the antemedial by obliquely placed black points on costa, below cell, and in submedian fold, and one nearer base on vein 1; median nervure streaked with fuscous and with a white streak on its extremity, very slightly hooked on discocellulars and with a small fuscous patch beyond it; a postmedial series of black points bent outwards below costa and oblique below vein 4, where it is met by an oblique shade from termen below apex; a terminal series of black points. Hind wing ochreous suffused with fuscous; the cilia ochreous; the underside ochreous white irrorated with fuscous, a black discoidal spot, postmedial series of short streaks on the veins, and terminal series of points.

Hab. Punjab, Dharmsála (*Hocking*), 1 ♂, 2 ♀, Umballa (*Reed*), 2 ♀ type; Madras, Nilgiris (*Hampson*), 1 ♀. *Exp.* 36 millim.

1883. **Cirphis salebrosa.** (Plate XCII. fig. 17.)

Leucania salebrosa, Butl. A. M. N. H. (5) i. p. 80 (1878).

Head and thorax ochreous mixed with rufous and tinged with brown on head, tegulæ, and patagia; tegulæ with three brown lines; abdomen ochreous irrorated with brown. Fore wing ochreous, the cell and area just below and beyond it suffused with bright rufous; the costal and inner areas sparsely irrorated with black; the veins defined by rufous streaks and the interspaces beyond and below the cell streaked with rufous; an oblique rufous streak on inner area before middle; extremity of median nervure with a short elliptical white streak usually very slightly hooked on discocellulars, with a black point before it in lower angle of cell and sometimes a small fuscous patch beyond the angle; traces of an antemedial line sometimes present, oblique from costa to submedian fold, then angled inwards on vein 1; postmedial line represented by a more or less complete series of black points bent outwards below costa and oblique below vein 4, where it is met by an oblique brown shade from termen below apex; a terminal series of black points usually present. Hind wing ochreous suffused with fuscous; the cilia ochreous; the underside ochreous white irrorated with fuscous, a small discoidal lunule.

Hab. Japan, Yokohama (*Jonas*, *Pryer*), 2 ♂, 1 ♀ type, Tokio (*Maries*), 1 ♀; C. China, Kiukiang (*Pratt*), 1 ♂, 1 ♀; W. China, Ta-chien-lu (*Pratt*), 1 ♂. *Exp.* 32–42 millim.

1884. **Cirphis ignita,** n. sp. (Plate XCII. fig. 18.)

♂. Head and thorax purplish red mixed with ochreous; tegulæ

with traces of three lines; patagia with some black scales near upper edge; abdomen ochreous tinged with rufous. Fore wing orange-yellow, suffused with purple-red except below cell near base, in end of cell, on inner margin and terminal area; the costal area white sparsely irrorated with black, and with greyish fuscous suffusion below it; median nervure streaked with greyish fuscous, its extremity with white, a greyish fuscous patch beyond the cell between veins 5 and 3; subbasal line represented by a black point on costa, the antemedial line by an obscure series of points oblique from costa to submedian fold, then angled inwards on vein 1; a postmedial series of points bent outwards below costa, and oblique below vein 4, where it is met by an oblique shade from termen below apex: the veins of terminal area with slight pale streaks; a terminal series of black points. Hind wing ochreous suffused with fuscous brown, the termen tinged with pink; cilia ochreous; the underside pale ochreous, the costal and terminal areas tinged with purplish pink and irrorated with fuscous, a discoidal spot and postmedial and terminal series of points.

Hab. Assam, Khásis, 1 ♂ type. *Exp.* 34 millim.

1885. **Cirphis pyrastis**, n. sp. (Plate XCII. fig. 19.)

♂. Head and thorax rufous with a greyish tinge; tegulæ with three slight dark lines; abdomen greyish with ill-defined darker bands, the anal tuft ochreous. Fore wing golden yellow sparsely irrorated with black, the veins, costal area, a broad fascia on vein 1 and above vein 2 from its origin to termen and obliquely to apex suffused with flesh-pink; one or two obliquely-placed antemedial black points from middle of cell to submedian fold; a short pale streak on extremity of median nervure; a postmedial series of black points bent outwards below costa and oblique below vein 4; an oblique diffused yellow fascia from apex; a terminal series of black points. Hind wing semihyaline white, the apical half of termen tinged with brown; the underside with the costal area ochreous irrorated with brown, some black points on termen towards apex.

Hab. Paraguay, Sapucay (*Foster*), 2 ♂ type. *Exp.* 34 millim.

1886. **Cirphis formosana.** (Plate XCII. fig. 20.)

Aletia formosana, Butl. P. Z. S. 1880, p. 675.
Leucania adusta, Moore, P. Z. S. 1881, p. 335; Hmpsn. Moths Ind. ii. p. 275.
Leucania semicana, Pag. Zoologica, xii. p. 75, pl. ii. f. 37 (1900).

♂. Head and thorax ochreous tinged with rufous; tegulæ with slight dark tips; abdomen pale brownish, the anal tuft ochreous. Fore wing ochreous, suffused in parts with flesh-colour and sparsely irrorated with black; the veins defined by slight fuscous streaks, the interspaces of terminal half also streaked with fuscous: traces of an antemedial series of black points oblique from costa to submedian fold, then angled inwards on vein 1; traces of ochreous orbicular and reniform stigmata, the latter with black point in lower part and short yellow streak below it on extremity of median

nervure; a postmedial series of black points bent outwards below costa and oblique below vein 4, connected by traces of a highly crenulate line; an oblique dark shade from termen below apex; a terminal series of black points. Hind wing whitish, the veins and terminal half suffused with fuscous brown; the underside with the costal and terminal areas tinged with purplish pink and irrorated with black, a postmedial series of short black streaks on the veins and series of black points on apical half of termen.

Hab. Formosa (*Hobson*), 1 ♀ type; Punjab, Manpuri, 1 ♀; Sikhim (*Lidderdale*), 1 ♂, 2 ♀; Assam, Khásis, 1 ♀ type *adusta*; Travancore, Pirmád (*Imray*), 1 ♂; Ceylon, Pundaloya (*Green*), 3 ♂, W. Haputale (*Pole*), 1 ♂; Selangor, Kuala Lumpur (*Durham*), 1 ♂; Borneo, Kuching (*Shelford*), 1 ♂; N. Guinea, Bismarck Arch., type † ♀ *semicana* in Coll. Rothschild. *Exp.* 36 millim.

1887. Cirphis clarescens. (Plate XCII. fig. 21.)

Leucania clarescens, Möschl. Abh. Senck. Ges. xvi. p. 143 (1890).

Head and thorax brownish ochreous; palpi with some black above; frons and vertex of head with dark bars; tegulæ and patagia tinged with purplish red, the former with black medial line, the latter with black patch; metathoracic crest blackish; abdomen brownish ochreous, the dorsal crest dark-tipped. Fore wing brownish ochreous with a pink tinge; the costal, inner, and terminal areas irrorated with a few black scales; a black streak, edged below by rufous, below basal half of cell and a similar oblique streak from inner margin near base to below middle of vein 1; a black point on middle of median nervure with a white streak on it, slightly hooked at lower angle of cell, then continued as fine streaks on veins 3, 4; a black point below origin of vein 2 and another in lower angle of cell; black streaks in the interspaces above veins 3, 4, the interspace above vein 2 suffused with lilacine grey; a curved postmedial series of black points on the veins and a terminal series; an oblique grey shade from termen below apex; cilia intersected with dark brown. Hind wing whitish, the veins and termen tinged with reddish ochreous; the underside with slight black irroration on costal area, some terminal black points from apex to vein 2.

Hab. Bahamas, Andros (*Bonhote*), 1 ♂, 1 ♀; Cuba; Porto Rico. *Exp.* 30 millim.

1888. Cirphis imperfecta. (Plate XCII. fig. 22.)

Leucania imperfecta, Smith, Trans. Am. Ent. Soc. xxi. p. 76 (1894); Dyar, Cat. Noct. N. Am. p. 163.

Head and thorax grey tinged with brown and irrorated with some fuscous; tegulæ with three dark lines; abdomen brownish grey irrorated with fuscous. Fore wing brownish grey irrorated with black, leaving ochreous streaks in submedian interspace to beyond middle, above veins 2 and 3, and in and beyond end of cell to near termen, and an oblique shade from apex; a slight black streak below base of cell and an oblique streak above inner margin

before middle; a short white streak on end of median nervure with a slight hook on discocellulars; a black point in lower angle of cell; the veins of terminal half with slight white streaks, a more prominent streak on vein 4, the interspaces with fine black streaks; an obliquely curved postmedial series of black points on veins 7–1; a terminal series of black points. Hind wing semihyaline white, the termen tinged with brown; cilia white, with fine brown line near base; the underside white, the costal and terminal areas down to vein 2 irrorated with brown.

Hab. U.S.A., Arizona, Cochise Co., Wilgus, 1 ♂, Prescott (*Kunzé*), 1 ♂, Huachuca Mts., 1 ♂, 1 ♀, Chiricahua Mts., 1 ♂. *Exp.* 36 millim.

1889. Cirphis velutina.

Leucania velutina, Ev. Bull. Mosc. 1846, iii. p. 87, pl. 2. f. 5; Herr.-Schäff. Eur. Schmett., Noct. ff. 362–3; Staud. Cat. Lep. pal. p. 192.

Head and thorax grey-brown mixed with fuscous; abdomen brownish grey with a slight rufous tinge towards extremity, the ventral surface irrorated with black. Fore wing brownish grey, the costal area irrorated with black; the veins whitish; the interspaces suffused with black except costal and inner areas and a postmedial dentate band; a black streak above base of inner margin; a pale streak in submedian fold to origin of vein 2 defined by blackish above and below; a diffused black streak in lower end of cell; the postmedial line represented by small diffused black marks in the interspaces between veins 7 and 1, incurved below vein 4, and with a grey band beyond them forming dentate marks defining the veins, longest on veins 7, 6, 4, 3, 2, the subterminal line being represented by some dentate blackish marks on outer edge of grey band; some black points on termen. Hind wing greyish, uniformly suffused with fuscous; the underside grey, tinged with brown and irrorated with black, especially on costal and terminal areas, an ill-defined curved postmedial line.

Hab. Russia, Urals, 2 ♂, 2 ♀, Zeller Coll.; W. Siberia, Altai; W. Turkestan, Issyk-Kul; E. Turkestan, Thian Shan Mts.; Mongolia, Urga, Changai Mts.; E. Siberia, Amurland, Ussuri. *Exp.* 44 millim.

1890. Cirphis comma.

Noctua comma, Linn. Faun. Suec. ii. p. 316 (1861); Dup. Lép. Fr. vii. p. 83, pl. 106. f. 1; Steph. Ill. Brit. Ent., Haust. iii. p. 73; Staud. Cat. Lep. pal. p. 192,
Noctua turbida, Hübn. Eur. Schmett., Noct. f. 617 (1827).
Noctua congener, Hübn. Eur. Schmett., Noct. f. 618 (1827).
Leucania nigrofasciata, Hmpsn. Moths Ind. ii. p. 279 (1894).
Leucania rhodocomma, Püng. Iris, xiii. p. 120 (1900).

Head and thorax pale grey-brown tinged with rufous; tegulæ with dark medial line; patagia with some black scales near upper edge; abdomen brownish ochreous, the anal tuft and ventral surface tinged with rufous. Fore wing pale olive-brown with a reddish tinge; the veins whitish; the costal area whitish sparsely irrorated

with black; a prominent black streak below base of cell to origin of vein 2; an oblique streak above inner margin before middle; a blackish streak in end of cell or spot in lower angle; the interspaces of terminal area with black streaks ending in a terminal series of black points. Hind wing ochreous white suffused with fuscous brown; the cilia ochreous white; the underside with the costal and terminal areas irrorated with brown, some black points on termen from apex to vein 2.

Ab. 1. *rhodocomma*. Ground-colour of head, thorax, and fore wing purplish red.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Switzerland, Zeller and Frey Colls.; N. Italy; Bulgaria, Rilo Dagh (*Elwes*); Armenia; Asia Minor, Pontus; W. Siberia; W. Turkestan, Ferghana, Issyk-Kul, Alexander Mts., type *rhodocomma* in Coll. Püngeler; Mongolia, Urga; Tibet, Amdo; E. Siberia, Amur, Ussuri; Punjab, Kulu, type † ♂ *nigrofasciata* in Coll. Elwes. *Exp.* 40–42 millim.

Larva. Meyr. Brit. Lep. p. 69; Barrett, Lep. Brit. v. p. 163, pl. 203. f. 3.

Greyish ochreous to reddish brown; dorsal and subdorsal lines pale or whitish, edged with dark brown and with a brown line between them; lateral and spiracular lines pale ochreous separated by a dark brown space; head brown marked with blackish. Food-plants, Grasses. 8–4.

1891. Cirphis insueta. (Plate XCII. fig. 23.)

Leucania insueta, Guen. Noct. i. p. 81 (1852); Smith, Cat. Noct. N. Am. p. 188.
Heliophila adonea, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 159 (1874).
Leucania heterodoxa, Smith, Tr. Am. Ent. Soc. xxi. p. 75, pl. v. f. 7 (1894); Dyar, Cat. Lep. N. Am. p. 163.
Leucania mimica, Streck. Lep. Rhop. & Het., Suppl. ii. p. 6 (1899).

Head and thorax ochreous more or less strongly tinged with rufous; tegulæ with blackish medial line; patagia with some black scales near upper edge: abdomen ochreous, the ventral surface rufous. Fore wing ochreous, mostly suffused with rufous and sparsely irrorated with black, more thickly on costal area; the veins white defined by rufous streaks; the interspaces with rufous streaks; a black streak below base of cell; a black point below origin of vein 2, with another below it on vein 1; a postmedial series of points on the veins bent outwards below costa, excurved to vein 4, then oblique; an oblique pale shade from apex; a terminal series of black points, the terminal area rather darker and angled inwards in discal and submedian folds. Hind wing ochreous white, the veins and terminal area suffused with fuscous; the underside with the costal area suffused with rufous and irrorated with brown.

Hab. Canada, Nova Scotiâ (*Redman*), 1 ♂, Anticosti, 1 ♀; U.S.A., New York, 4 ♂ type *adonea*, 5 ♀ type, Minnesota, 1 ♀, Colorado. *Exp.* 34–38 millim.

Larva. (Original.) Head shining brown, the reticulations indistinct, the vertical band next the suture distinct and black. Body as in *roseola*, but the markings faint, diffused, not contracted. The

subdorsal and lower lateral bands are greyish brown, not much darker than the other markings. General colour light brown, not creamy. A diffused lighter shade above the subdorsal dark band. Cervical shield more chitinized than in *roseola*. Feet without dark patches. Food-plants, Grasses.—H. G. D.

1892. Cirphis dia. (Plate XCII. fig. 24.)

Heliophila dia, Grote, Can. Ent. xi. p. 29 (1879); id. Ill. Essay, 56, pl. ii. f. 19; Smith, Cat. Noct. N. Am. p. 187.
Leucania megadia, Smith, Pr. U.S. Nat. Mus. xxv. p. 191 (1902); Dyar, Cat. Lep. N. Am. p. 163.

♂. Head and thorax white mixed with pale brown; tegulæ with medial brown line; a few dark scales near upper edge of patagia; abdomen white tinged with brown, the anal tuft with ochreous; pectus, legs, and ventral surface of abdomen much browner. Fore wing ochreous white tinged with reddish brown; the veins white defined by fine brown streaks, the interspaces with brown streaks, the costal and inner areas sparsely irrorated with black; a black point in lower angle of cell; a postmedial series of black points on the veins, bent outwards below costa, excurved to vein 4, then oblique; some black points on termen sometimes present; cilia reddish brown intersected with white. Hind wing whitish suffused and irrorated with brown except towards base; cilia white; the underside white, the costal and terminal areas irrorated with brown.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 3 ♂ co-type *megadia*, British Columbia, Laggan, Kaslo (*J. W. Cockle*), 9 ♂, 4 ♀; U.S.A., Washington, Wyoming, Oregon, Nevada, Colorado, California, 2 ♂ type, (*Walsingham*) 1 ♂, Arizona. *Exp.* 30–36 millim.

*1893. Cirphis diagramma. (Plate XCVI. fig. 15.)

Leucania diagramma, Beth.-Baker, ined.

♂. Head and thorax whitish with a violaceous tinge and irrorated with brown; tegulæ with three dark lines; patagia with some black scales near upper edge; tibiæ slightly streaked with black; abdomen whitish, dorsally tinged with brown and ventrally irrorated with black; the anal tuft ochreous. Fore wing whitish with a slight violaceous tinge, the veins white defined by dark streaks, the interspaces with purple-brown streaks, the costal and inner areas irrorated with black; a purple-brown shade below median nervure and a black streak in base of submedian fold; the median nervure and vein 4 with stronger white streaks; a black point in lower angle of cell; a postmedial series of black points bent outwards below costa and oblique below vein 4, an oblique diffused white fascia from apex with triangular brown shade below it from termen; a terminal series of black points. Hind wing whitish tinged with ochreous brown except the interspaces of basal area; a series of black points on termen from apex to vein 2; the underside white, with some dark irroration on costal area.

Hab. Brit. N. Guinea, Babooni (*Pratt*), type † ♂ in Coll. Bethune-Baker. *Exp.* 38 millim.

1894. Cirphis bifasciata.

Leucania bifasciata, Moore, P. Z. S. 1888, p. 410; Butl. Ill. Het. B. M. vii. p. 51, pl. 126. f. 13; Hmpsn. Moths Ind. ii. p. 279.

♀. Head and thorax ochreous white; tegulæ tinged with purplish pink and with two slight dark lines; palpi, pectus, and legs tinged with pink; abdomen pale, dorsally tinged with brown, ventrally with pink. Fore wing rufous, the costal area pale ochreous to middle, the inner area to near tornus; a slight whitish streak on median nervure from before middle, the veins beyond the cell slightly streaked with white; a black point in lower angle of cell, a more or less distinct postmedial series of black points; a slight triangular dark shade from termen below apex; cilia pink. Hind wing ochreous whitish tinged with fuscous, especially towards termen; cilia pinkish at base. Underside of fore wing with the cell and area below and beyond it suffused with fuscous.

Hab. Punjab, Dharmsála (*Hocking*), 2 ♀ type. *Exp.* 36 millim.

1895. Cirphis atrinota, n. sp. (Plate XCII. fig. 25.)

♂. Head and thorax ochreous white tinged with rufous; abdomen ochreous dorsally tinged with fuscous, ventrally irrorated with black. Fore wing ochreous white; the costal and inner areas slightly irrorated with black; the veins whitish defined by fine rufous streaks, the interspaces also streaked with rufous; a slight black streak below base of cell; the white streak on median nervure expanding into a small spot at lower angle of cell, in which there is a black point, and beyond which there is a small triangular black patch; traces of a postmedial series of black points bent outwards below costa and oblique below vein 4; a triangular rufous patch from termen below apex and slight marks towards tornus; cilia deep rufous. Hind wing ochreous white, the termen tinged with ochreous; the underside with the costal area and apical part of termen ochreous irrorated with black, some black points on termen from apex to vein 2.

Hab. Mashonaland, Salisbury (*Marshall*, *Dobbie*), 2 ♂ type. *Exp.* 30 millim.

1896. Cirphis roseilinea. (Plate XCII. fig. 26.)

Leucania roseilinea, Wlk. Journ. Linn. Soc., Zool. vi. p. 179 (1862).
Leucania simillima, Wlk. Journ. Linn. Soc., Zool. vi. p. 179 (1862).

Head and thorax grey mixed with pale brown and tinged with purplish red; abdomen ochreous dorsally tinged with brown, ventrally irrorated with black; the claspers of male with thick tufts of hair. Fore wing ochreous white tinged with vinous red, the costa irrorated with black; the veins white defined by purple-brown streaks; the interspaces also streaked with purple-brown; a black streak below base of cell and an oblique streak above inner margin before middle; a brown shade below median nervure; a black point in lower angle of cell; a postmedial series of black

points bent outwards below costa and oblique below vein 4; a pale oblique fascia from apex defined by brown above and below by a triangular brown shade from termen below apex; a terminal series of black points. Hind wing ochreous white; the underside with the costal area irrorated with brown, the termen sometimes with series of black points.

Hab. N. China, Shanghai, 1 ♂; Madras, Travancore, Pirmád, 1 ♂; Ceylon, Kandy (*E. E. Green*), 1 ♂; Singapore (*Ridley*), 1 ♀; Borneo, Sarawak, type and type *simillima* in Mus. Oxon., Sandakan (*Pryer*), 1 ♂. *Exp.* 30–34 millim.

1897. Cirphis polemusa.

Leucania polemusa, Swinh. P. Z. S. 1885, p 447, pl. 27. f. 1; Hmpsn. Moths Ind. ii. p. 280.

Head and thorax white mixed with pale brown; palpi blackish at side; tegulæ with two dark lines; legs streaked with blackish; abdomen ochreous whitish. Fore wing narrow, white, the costal and inner areas slightly irrorated with black; a yellow shade on inner area and below median nervure to end of cell and thence obliquely to apex; the veins white defined by fine brown streaks, the median nervure more prominently white, forming a very slight hook at lower angle of cell, in which there is a black point; a black streak in submedian fold to near origin of vein 2; a postmedial series of black points bent outwards below apex and oblique below vein 4; a terminal series of black points; cilia intersected with white. Hind wing pure white; the underside with the costal area irrorated with pale brown, some black points on termen from apex to vein 2.

Hab. Bombay, Poonah (*Swinhoe*), 1 ♂, 1 ♀, type. *Exp.* 26 millim.

1898. Cirphis secta. (Plate XCII. fig. 27.)

Leucania secta, Herr.-Schäff. Corresp.-Blatt zool.-min. Ver. Regensb. 1868, p. 147.

♂. Head whitish; palpi, sides of frons, and antennæ rufous; thorax yellow, patches on tegulæ, streaks on outer edge of patagia, and the thoracic crest rufous; pectus and legs ochreous white, the latter streaked with rufous; abdomen ochreous. Fore wing yellow with a slight greenish tinge irrorated with a few black scales; a rufous fascia below the cell; a streak above inner margin near base; the veins beyond the cell defined by rufous streaks and vein 1 to near base, a more prominent streak above base of vein 4; a black point in lower angle of cell, a curved postmedial series and a terminal series; cilia rufous intersected with fuscous. Hind wing greenish yellow, the termen and inner area slightly tinged with rufous.

♀. Hind wing pale, the terminal area suffused with brown.

Hab. Cuba, Santiago (*Schaus*), 2 ♂. *Exp.* 24 millim.

1899. **Cirphis albifasciata**, n. sp. (Plate XCII. fig. 28.)

♂. Head and thorax rufous; tegulæ with a few black scales on upper edge; abdomen pale rufous, the ventral surface whitish irrorated with black. Fore wing ochreous, mostly suffused with rufous and sparsely irrorated with black; a diffused brown fascia on subcostal nervure from before middle to apex; a white streak on median nervure with a diffused brown fascia below it, an oblique brown streak from inner margin before middle to middle of vein 1; a few black scales in middle of cell and a slight V-shaped mark representing extremity of claviform; a black point in lower angle of cell, a diffused white fascia in submedian fold from middle to termen, towards which it extends above vein 2; the veins beyond the cell slightly streaked with whitish and defined by fine brown streaks; veins 4, 3 more prominently white; the interspaces of terminal area with fine brown streaks; postmedial line represented by a series of black points bent outwards below costa and oblique below vein 4; an oblique ochreous fascia from apex with a triangular brown shade on termen below it; a terminal series of black points. Hind wing semihyaline white, with a series of black points on termen from apex to vein 2; the underside with the costal area irrorated with black.

Hab. Paraguay, Sapucay (*Foster*), 1 ♂ type. *Exp.* 36 millim.

1900. **Cirphis abdominalis.** (Plate XCII. fig. 29.)

Leucania abdominalis, Moore, P. Z. S. 1881, p. 338; Hmpsn. Moths Ind. ii. p. 273.
Leucania moorei, Swinh. A. M. N. H. (7) x. p. 50 (1902).

Head, thorax, and abdomen flesh-colour or pale straw-yellow; tegulæ with three fine brown lines. Fore wing flesh-colour or pale straw-yellow; the veins whitish defined by fine brown streaks; the interspaces also streaked with brown; a brown fascia below median nervure; antemedial line sometimes represented by a black point in submedian fold, the postmedial line by obliquely placed black points on veins 4 and 2; a triangular shade from termen below apex; a series of minute terminal black points sometimes present. Hind wing ochreous white suffused with fuscous except on costal area, especially on the veins and towards termen; the underside ochreous white, with some dark irroration on costal and terminal areas, a discoidal point and postmedial and terminal series.

Hab. Punjab, Dharmsála (*Hocking*), 3 ♂, 3 ♀, type; Bengal (*Russell*), 1 ♀ type. *Exp.* 38 millim.

1901. **Cirphis lineatipes.** (Plates XCII. fig. 30.)

Leucania lineatipes, Moore, P. Z. S. 1881, p. 335; Hmpsn. Moths Ind. ii. p. 279.
Leucania percisa, Moore, P. Z. S. 1888, p. 410; Hmpsn. Moths Ind. ii. p. 274.

Head and thorax pale ochreous brown, head browner; tegulæ

with two dark lines; abdomen whitish tinged with ochreous. Fore wing pale brownish ochreous, sometimes tinged with purplish pink and irrorated with fuscous; the veins with slight whitish streaks defined by fine brown lines; median nervure and vein 4 with stronger white streaks, the former defined below by a brown fascia: a triangular brown shade from termen below apex; a black point in lower angle of cell; a curved postmedial series of black points on the veins and a terminal series. Hind wing whitish tinged with brown, especially on the veins and terminal half; the underside with the costal and terminal areas slightly tinged with brown and irrorated with fuscous, some black points on termen.

Hab. Punjab, Sultanpur, Kulu (*G. Young*), 1 ♂, 1 ♀, Simla (*Swinhoe*), 2 ♂, Dharmsála (*Hocking*), 1 ♂, 4 ♀, type *percisa*; Assam, Khásis, 2 ♂. *Exp.* 34–38 millim.

1902. Cirphis anteroclara. (Plate XCII. fig. 31.)

Leucania anteroclara, Smith, Pr. U.S. Nat. Mus. xxv. p. 200 (1902); Dyar, Cat. Lep. N. Am. p. 163.

Head and thorax ochreous with an olive tinge; palpi slightly irrorated with fuscous; tegulæ with three dark lines; abdomen ochreous white. Fore wing ochreous with an olive tinge; the veins streaked with white, the median nervure and veins 4, 3 more strongly, the median nervure defined by a slight dark shade below it; the interspaces streaked with olive; a minute black point in lower angle of cell; postmedial black points on veins 5 and 2; an oblique fuscous shade from termen below apex. Hind wing ochreous white, the veins and terminal area tinged with brown; the underside with the costal and terminal areas down to vein 2 irrorated with brown, some black points on termen towards apex.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 4 ♂, 3 ♀. *Exp.* 40 millim.

*1903. Cirphis oregona.

Leucania oregona, Smith, Pr. U.S. Nat. Mus. xxv. p. 202 (1902); Dyar, Cat. Lep. N. Am. p. 163.

♂. Pale fawn or reddish grey; tegulæ with two dark lines; vertex of thorax with some dark irroration. Fore wing with the veins white defined by fine dark streaks, the interspaces also with dark streaks; the white streak on median nervure expanding into a mark at lower angle of cell with a black point before it in the angle, defined below by a fuscous streak confluent with the triangular dark shade from termen below apex; postmedial line punctiform, entire; terminal area and cilia fuscous. Hind wing white, with a series of black terminal marks; the underside with the costal area irrorated with reddish.

Hab. U.S.A., Oregon, Corvallis. *Exp.* 30 millim. This species is unknown to me.

*1904. Cirphis polysticha. (Plate XCII. fig. 32.)

Leucania polysticha, Turner, Pr. Linn. Soc. N. S. W. 1902, p. 80.

♂. Head and thorax ochreous mixed with brown and fuscous; palpi blackish at sides; abdomen brownish ochreous, the anal tuft fuscous at extremity. Fore wing ochreous tinged with reddish brown and irrorated with black; the veins whitish defined by fuscous streaks; the cell and interspaces of terminal area with fuscous streaks; a black point below origin of vein 2 and a slight streak in and beyond lower angle of cell; two postmedial series of black points, becoming very inwardly oblique below vein 4; an indistinct oblique pale fascia from apex; a terminal series of black points. Hind wing semihyaline white, with some black points on apical half of termen; the underside with the costal area irrorated with brown.

Hab. Queensland, Brisbane, type † ♂ in Coll. Turner. *Exp.* 42 millim.

1905. Cirphis rivorum. (Plate XCIII. fig. 1.)

Leucania rivorum, Guen. Noct. i. p. 82 (1852).
Leucania pampa, Schaus, Trans. Am. Ent. Soc. xxi. p. 233 (1894).

♀. Head and thorax pale, suffused with purplish pink and mixed with a few dark scales; palpi with some fuscous at sides; tegulæ with three dark lines; abdomen ochreous white with slight dark irroration. Fore wing yellowish white, irrorated with a few black scales on costal and inner areas; the veins white strongly defined by purple-brown streaks; the interspaces with purple-brown streaks; a black point below origin of vein 2 and another in lower angle of cell; a postmedial series of indistinct blackish points on the veins. Hind wing semihyaline white, the termen slightly tinged with brown on apical half; the underside with the costal area and apical part of termen tinged with ochreous and with slight dark irroration, some black points on latter.

♂. Tegulæ without the three dark lines; fore wing with the veins less prominently defined; hind wing entirely white.

Hab. Cuba; Brazil, Rio Janeiro, 1 ♀, Castro Paraña, type *pampa* in Coll. Schaus; Paraguay, Sapucay (*Foster*), 1 ♀. *Exp.* 38 millim.

1906. Cirphis sarcistis, n. sp. (Plate XCIII. fig. 2.)

Leucania extincta, Druce, Biol. Centr.-Am., Het. i. p. 261 (part.), nec Guen.

♂. Head and thorax pale flesh-pink, mixed with whitish and slightly with dark brown; tegulæ with traces of two dark lines; abdomen rufous, ventrally paler with some dark irroration. Fore wing pale flesh-pink with slight dark irroration; the veins whitish defined by fine brown streaks; the interspaces of terminal half with brown streaks; a black point in lower angle of cell; a slight oblique dark shade from termen below apex. Hind wing

semihyaline white, the inner area with some pale rufous hair; the underside with the costal area tinged with ochreous and slightly irrorated with brown, some terminal black points from apex to vein 2.

Hab. Costa Rica (*Underwood*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 38 millim.

1907. **Cirphis calgariana.** (Plate XCIII. fig. 3.)

Leucania calgariana. Smith, Pr. U.S. Nat. Mus. xxv. p. 201 (1902); Dyar, Cat. Lep. N. Am. p. 163.

♂. Head and thorax pale pinkish rufous; palpi more ochreous; tegulæ with three dark lines; abdomen greyish ochreous, the anal tuft pale ochreous. Fore wing pinkish rufous; the veins streaked with white, the median nervure and veins 3, 4 more strongly, the median nervure with a slight dark shade below it; the interspaces with fine rufous streaks; a minute black point in lower angle of cell and postmedial points on veins 5 and 2; a very slight dark shade from termen below apex. Hind wing white, the veins and termen tinged with brown; the underside tinged with pink, the costal area irrorated with a few black scales.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 2 ♂ co-type. *Exp.* 42 millim.

1908. **Cirphis sarcophæa,** n. sp. (Plate XCIII. fig. 4.)

♂. Head and thorax rufous; sides of palpi and frons blackish; abdomen rufous dorsally suffused with black. Fore wing pinkish rufous sparsely irrorated with black; the veins pale defined by rufous streaks, the interspaces of terminal half finely streaked with rufous; a small black patch at lower angle of cell; a terminal series of black points. Hind wing uniform fuscous; cilia rufous tinged with fuscous at base; the underside rufous irrorated with black, a black discoidal spot and terminal series of points.

Hab. N. Peru, Hauncabamba, 2 ♂ type. *Exp.* 36–42 millim.

1909. **Cirphis jaliscana.** (Plate XCIII. fig. 5.)

Leucania jaliscana, Schaus, J. N.Y. Ent. Soc. vi. p. 114 (1898); Druce, Biol. Centr.-Am., Het. ii. p. 568.

♂. Head and thorax ochreous yellow; tegulæ with three dark lines, and purplish pink towards extremities; the prothoracic and abdominal crests black and white; abdomen ochreous yellow. Fore wing ochreous yellow, the veins defined by rufous streaks and with rufous streaks in interspaces; antemedial line represented by three obliquely placed black points on inner half; a white point at lower angle of cell on a diffused rufous patch; a postmedial series of black points, bent outwards below costa, excurved to vein 4, then oblique; a triangular rufous patch on termen below apex;

cilia fuscous brown. Hind wing semihyaline white, the veins and termen slightly tinged with ochreous. Underside of fore wing with the subcostal nervure and veins beyond the cell to postmedial line streaked with black; hind wing with the costal area slightly irrorated with black, some black points on apical half of termen.

Hab. Mexico, Guadalajara, 1 ♂ type † ♂ in Coll. Schaus; Cuba. *Exp.* 34 millim.

1910. **Cirphis polystrota**, n. sp. (Plate XCIII. fig. 6.)

Head and thorax pale purplish red; vertex of head whitish; abdomen whitish dorsally tinged with ochreous brown. Fore wing ochreous suffused with pinkish brown and slightly irrorated with black; the veins white defined by slight brown streaks; the interspaces with fine brown streaks; a white point at lower angle of cell; a curved postmedial series of black points on the veins and a terminal series; a slight oblique dark shade from termen below apex. Hind wing semihyaline white, the veins and termen tinged with ochreous brown; the underside with the costal area tinged with ochreous and slightly irrorated with brown, some black points on termen from apex to vein 2.

Hab. Trinidad (*Lady Broome*), 1 ♀; Brazil, Rio Janeiro, 2 ♂ type; Paraguay, Sapucay (*Foster*), 3 ♀. *Exp.* 34–38 millim.

1911. **Cirphis microsticha**, n. sp. (Plate XCIII. fig. 7.)

Leucania extincta, Druce, Biol. Centr.-Am., Het. i. p. 261 (part.), nec Guen.

Leucania solita, Druce, Biol. Centr.-Am., Het. i. p. 262 (nec Wlk.).

Head and thorax whitish tinged with flesh-pink and slightly mixed with brown; tegulæ with traces of two dark lines; abdomen ochreous whitish. Fore wing whitish tinged with flesh-pink and slightly irrorated with black; the veins white defined by slight brown streaks; the interspaces with brown streaks, more prominent towards termen; a black point below origin of vein 2 and another in lower angle of cell; a postmedial series of black points on the veins, sometimes connected by traces of a dentate line; a slight oblique dark shade from termen below apex; a terminal series of black points. Hind wing white, female with the veins and termen tinged with brown; the underside with the costal area tinged with ochreous and slightly irrorated with brown; some black points on termen from apex to vein 2.

Hab. Mexico City (*Hoege*), 1 ♀; Costa Rica, Candelaria Mts. (*Underwood*), 1 ♂, 1 ♀ type, Godman-Salvin Coll.; Panama, La Chorrera (*Dolby-Tyler*), 1 ♀. *Exp.* 34–38 millim.

1912. **Cirphis palliseca.** (Plate XCIII. fig. 8.)

Leucania palliseca, Smith, Pr. U.S. Nat. Mus. xxv. p. 203 (1902); Dyar, Cat. Lep. N. Am. p. 163.

♀. Head, thorax, and abdomen whitish ochreous, tegulæ usually with two or three slight dark lines; patagia sometimes with some black scales near upper edge; tibiæ with blackish bands on the spurs; abdomen with the ventral surface irrorated with fuscous. Fore wing whitish ochreous; the veins white defined by fine rufous streaks, the interspaces also streaked with rufous; the costal area slightly irrorated with black; a black point below origin of vein 2 and another in lower angle of cell; traces of a curved postmedial series of points, almost obsolete except on veins 5 and 2; a slight triangular brown shade from termen below apex; a terminal series of slight points. Hind wing white, the veins and termen tinged with ochreous; the underside with the costal area tinged with ochreous and irrorated with brown, some black points on apical part of termen.

Hab. U.S.A., Colorado, Denver, 1 ♀ co-type, Durango (*Oslar*), 4 ♀, New Mexico, Albuquerque (*Oslar*), 2 ♀, Arizona, Jerome (*Oslar*), 1 ♀. *Exp.* 34–40 millim.

1913. **Cirphis humidicola.** (Plate XCIII. fig. 9.)

Leucania humidicola, Guen. Noct. i. p. 90 (1852).
Leucania extenuata, Guen. Noct. i. p. 90 (1852).
Leucania tayaudi, Guen. Noct. i. p. 90 (1852).
Leucania dorsalis, Wlk. ix. 98 (1856).
Leucania solita, Druce, Biol. Centr.-Am., Het. i. p. 262 (part.), nec Wlk.

Head and thorax ochreous, with a very slight rufous tinge; frons with rufous bar; tegulæ with three dark lines and the tips fuscous and grey; a few black scales near upper edge of patagia; abdomen ochreous. Fore wing ochreous; the veins white defined by fine rufous streaks, the interspaces also streaked with rufous; a black point below origin of vein 2 and another in lower angle of cell; traces of a postmedial series of points usually almost obsolete, except those on veins 5 and 2; a triangular brown shade from termen below apex; a terminal series of slight points. Hind wing white, the veins and termen slightly tinged with ochreous; the underside with the costal area tinged with ochreous and irrorated with fuscous, some black points on apical part of termen.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♀, Guerrero (*H. H. Smith*), 1 ♀; Guatemala (*Champion*), 1 ♂, 2 ♀; Costa Rica (*Underwood*), 2 ♀; Panama, Bugaba (*Champion*), 1 ♂ Godman-Salvin Coll., La Chorrera (*Dolby-Tyler*), 3 ♂; Cuba; Haiti (*Tweedie*), 2 ♀ type *dorsalis*; St. Lucia (*Cowie*), 1 ♀; Grenada (*H. H. Smith*), 2 ♂; St. Vincent (*H. H. Smith*), 1 ♂; Barbados (*Frampton*), 1 ♀; Trinidad, 1 ♀; Cayenne; Brazil, Amazons (*Trail*), 1 ♂, Para (*Austen*), 1 ♂, Espiritu Sto., 1 ♀, Petropolis (*Doer*), 1 ♀, Organ Mts. (*R. S. Wagner*), 1 ♂; Paraguay, Sapucay (*Foster*), 2 ♂, 2 ♀; Argentina, Goya (*Perrins*), 1 ♀; Peru, Callao (*J. J. Walker*), 1 ♂, 1 ♀. *Exp.* 32–40 millim.

1914. Cirphis insulicola.

Leucania insulicola, Guen. Noct. i. p. 82 (1852).
Leucania simplaria, Saalm. Lep. Madag. p. 252, f. 160 (1891).

Head and thorax ochreous tinged with rufous; tegulæ with two dark lines; patagia with some black scales near upper edge; abdomen brownish ochreous, the dorsal crest blackish at tip. Fore wing ochreous; the costal and inner areas slightly irrorated with black; the veins whitish defined by fine brown streaks, the interspaces also streaked with brown; the antemedial line represented by obliquely placed black points below cell and in submedian fold; a black point in lower angle of cell; a postmedial series of points, with traces of another series before them, bent outwards below costa and oblique below vein 4; an oblique pale fascia from apex defined by brownish above and below by the triangular brown shade from termen below apex; a terminal series of black points. Hind wing semihyaline white, the veins and termen tinged with brown, especially in female; the underside with the costal area tinged with ochreous and irrorated with brown, some black points on termen from apex to vein 2.

Ab. 1. Fore wing with small fuscous patch beyond lower angle of cell and the terminal area darker.—Gambia, in Coll. de Joannis.

Hab. S. Leone (*Cator*), 1 ♀; Gambia; Nigeria, Sapele (*Sampson*), 1 ♂, 1 ♀; Natal, Durban (*Gooch*), 1 ♀; Madagascar; Bourbon, type † in Mus. Paris. *Exp.* 34–36 millim.

1915. Cirphis compta.

Leucania compta, Moore, P. Z. S. 1881, p. 336, pl. 37. f. 8; Hmpsn. Moths Ind. ii. p. 272.
Leucania canaraica, Moore, P. Z. S. 1881, p. 339.
Leucania nefasta, Swinh. Trans. Ent. Soc. 1890, p. 219.
Leucania stramen, Hmpsn. Ill. Het. B. M. viii. p. 68, pl. 144. f. 2 (1891).

Head and thorax ochreous tinged with rufous; tegulæ with two dark lines; patagia with some black scales near upper edge; abdomen ochreous, dorsally irrorated with fuscous. Fore wing ochreous, with a slight rufous tinge in and beyond end of cell; the veins whitish defined by fine reddish-brown streaks, the interspaces also streaked with brown; the median nervure more prominently white, expanding towards extremity, beyond which there is a small fuscous patch; the antemedial line usually represented by a black point below cell and often another nearer the base on vein 1; a postmedial series of black points bent outwards below costa and oblique below vein 4; an oblique pale fascia from apex, with a triangular dark shade below it from termen; a terminal series of black points. Hind wing white, the termen tinged with ochreous brown from apex to vein 2; the underside with the costal and terminal areas tinged with ochreous, some black points on apical half of termen.

Hab. Ganjam; Bombay, Canara (*Ward*), 1 ♀ type *canaraica*; Madras, Nilgiris (*Hampson*), 1 ♂ type *stramen*; Ceylon, Dickoya

(*Green*), 3 ♂; Burma, Bhamo, 2 ♂ type *nefasta*; Singapore (*Ridley*), 1 ♂; Borneo, Kuching (*Shelford*), 1 ♂. *Exp.* 26–32 millim.

1916. **Cirphis megaproctis**, n. sp. (Plate XCIII. fig. 10.)

♂. Head and thorax ochreous white; palpi blackish at sides; frons with black bar; tegulæ with two black lines and black tips; patagia with some black scales near upper edge; legs irrorated with black, mid tibiæ with two black streaks, hind tibiæ with one, spurs banded with black; abdomen ochreous white, a sublateral series of small black spots, the ventral surface irrorated with black. Fore wing ochreous white, the costal and inner areas slightly irrorated with black; the veins white defined by fine fuscous streaks, the interspaces of terminal area also streaked with fuscous; traces of an antemedial series of points oblique from costa to the submedian fold, where there is a more prominent point, then strongly angled inwards on vein 1 and outwards above inner margin; a black point in lower angle of cell; a postmedial series of black points bent outwards below costa and oblique below vein 4, partially connected by a crenulate line; a very slight triangular fuscous shade from termen below apex; a terminal series of black points. Hind wing white, the veins and termen tinged with brown; the underside with the costal area slightly irrorated with black, a postmedial series of slight streaks on the veins and a terminal series of points from apex to vein 2.

Hab. Ceylon, Haputale (*Mackwood*), 1 ♂ type, Kandy (*E. E. Green*), 1 ♂. *Exp.* 30 millim.

1917. **Cirphis juncicola.**

Leucania juncicola, Guen. Noct. i. p. 83 (1852); Smith, Cat. Noct. N. Am. p. 188.
Heliophila adjuta, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 158 (1874).

Head and thorax ochreous; palpi with some black at sides: frons rufous below; tegulæ with two purplish-fuscous lines with reddish behind them, the thoracic crest purplish at tips; pectus purplish red

Fig. 159.—*Cirphis juncicola*, ♂. ½.

in front; abdomen ochreous dorsally tinged with reddish brown, the crest at base purplish fuscous at tips, ventrally slightly irrorated with black, the genital tufts large. Fore wing ochreous with slight

black irroration on costal area towards apex and on inner area towards tornus; the veins whitish defined by rufous streaks; the interspaces with rufous streaks, a slightly stronger rufous fascia below median nervure; a black point below origin of vein 2 and another in lower angle of cell; postmedial black points on veins 5 and 2, sometimes traces of a complete series and of a line bent outwards below costa; an oblique pale shade from apex; a terminal series of black points. Hind wing ochreous white, the veins and terminal area tinged with fuscous brown; the cilia ochreous white; the underside with the costal and terminal areas slightly irrorated with black, a terminal series of black points on apical half.

Hab. U.S.A., Alabama, 1 ♂ type *adjuta*, Texas, 2 ♂, 1 ♀. *Exp.* 40 millim.

1918. **Cirphis microgonia**, n. sp. (Plate XCIII. fig. 11.)

Leucania extincta, Druce, Biol. Centr.-Am., Het. i. p. 261 (part.), nec Guen.

Leucania salebrosa, Druce, Biol. Centr.-Am., Het. i. p. 262 (nec Butl.).

Head and thorax pale ochreous; palpi and frons tinged with brown; tegulæ with three brown lines; patagia with a few black scales near upper edge; abdomen ochreous, dorsally tinged with brown, ventrally irrorated with fuscous. Fore wing ochreous, the cell and area just below and beyond it tinged with rufous; the costal area whitish irrorated with black; the veins white defined by fine rufous streaks, the interspaces also streaked with rufous; the white streak on median nervure expanding into a slight hook at lower angle of cell; a black point below origin of vein 2 and another in lower angle of cell; a postmedial series of black points, bent outwards below costa and oblique below vein 4; an oblique pale fascia from apex and a triangular brown shade from termen below apex; a terminal series of black points. Hind wing ochreous white, the veins and terminal area suffused with brown; the underside with the costal area irrorated with fuscous, some black points on apical part of termen.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♂, Coatepec (*Brooks*), 1 ♂; Guatemalia (*Champion*), 2 ♂; Panama, Bugaba (*Champion*), 1 ♀, Chiriqui (*Champion*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 30–36 millim.

1919. **Cirphis riparia.**

Leucania riparia, Ramb. Ann. Soc. Obs. 1829, p. 261, pl. 6. f. 6; id. Ann. Soc. Ent. Fr. 1832, p. 288, pl. 9. f. 1; Dup. Lép. Fr., Suppl. iii. p. 339, pl. 31. ff. 3 *a*, *b*; Herr.-Schäff. Eur. Schmett., Noct. ff. 308, 316.

♀. Head and thorax white with a slight violaceous tinge, mixed with fuscous; tegulæ with a white line defined on each side by fuscous near base and a dark line defined by white above; abdomen ochreous white slightly tinged with brown. Fore wing whitish with a slight violaceous tinge; the veins white defined by fine brown

streaks, the interspaces also streaked with brown; a slight brown shade through the cell and thence obliquely to apex above an oblique pale fascia from apex defined below by a triangular brown shade from termen: a rather indistinct postmedial series of black points, bent outwards below costa and oblique below vein 4; a terminal series of black points; cilia brownish intersected with white. Hind wing white, the veins and terminal area suffused with brown; cilia white; the underside with the costal and terminal areas irrorated with brown, a discoidal point, postmedial series of short streaks on the veins, and some points on apical half of termen.

Hab. S. France, Leech Coll.; Corsica; Italy; Syria; E. Siberia, Ussuri. *Exp.* 34 millim.

*1920. **Cirphis deserticola.** (Plate XCIII. fig. 12.)

Leucania deserticola, Bartel, Iris, xv. p. 204 (1902).

♂. Head and thorax ochreous white tinged with brown, the head and tegulæ strongly tinged; abdomen whitish tinged with brown and ventrally irrorated with black. Fore wing pale suffused with reddish brown, the inner area slightly irrorated with fuscous; the veins prominently streaked with white, the median nervure and veins 3, 4 rather more strongly so, defined by fine dark brown streaks, the interspaces also streaked with brown. Hind wing whitish suffused with fuscous brown, the veins and area between veins 4 and 6 rather more strongly so; the underside white, the costal and terminal areas irrorated with brown, a small discoidal lunule.

Hab. Russia, Urals, co-type † in Coll. Püngeler. *Exp.* 38 millim.

1921. **Cirphis insecuta.** (Plate XCIII. fig. 13.)

Leucania insecuta, Wlk. xxxii. 625 (1865).
Leucania intermissa, Wlk. xxxii. 626 (1865).
Leucania striata, Leech, Trans. Ent. Soc. 1900, p. 127.

Head and thorax ochreous with a rufous tinge; frons and vertex of head with dark bars; tegulæ with three dark lines and greyish tips; patagia with some black scales near upper edge; abdomen ochreous dorsally tinged with fuscous, the claspers of male very large and with tufts of ochreous hair. Fore wing ochreous with a very slight reddish tinge in and beyond end of cell; the veins strongly defined by purple-brown streaks, the interspaces also streaked with brown; the subbasal line represented by a black point on costa, the antemedial line by points on costa, below cell, and on vein 1, the second furthest from base; extremity of claviform indicated by a black point; a white point at lower angle of cell; postmedial line represented by a double series of black points, the inner in the interspaces, the outer on the veins, bent outwards below costa and oblique below vein 4; a triangular brown shade from termen below apex; a terminal series of black points. Hind wing ochreous white, the veins, terminal and inner areas suffused with brown; the

underside whiter, with the costal and terminal areas irrorated with brown, some black points on termen from apex to vein 2.

Hab. Japan, Hakodate, 1 ♀, Yokohama (*Pryer*, *Manley*), 3 ♂, 5 ♀, type *striata*; China, Shanghai, 2 ♀ type and type *intermissa*. *Exp.* 40–46 millim.

*1922. Cirphis postica. (Plate XCVI. fig. 12.)

Leucania postica, Wilem. ined.

♂. Head and thorax ochreous white irrorated with pale brown; abdomen whitish, dorsally tinged with ochreous except at base, ventrally irrorated with black. Fore wing ochreous white; the veins defined by reddish-brown streaks, the interspaces also streaked with red-brown; an ill-defined ochreous-white fascia in submedian interspace and another in and beyond cell, then bent upwards to apex; a black point in lower angle of cell and a terminal series. Hind wing ochreous white, almost entirely suffused with fuscous brown; cilia whitish; the underside whitish irrorated with black, a slight discoidal lunule and terminal series of black points.

Hab. Japan, Yokohama, type † ♂ in Coll. Wileman. *Exp.* 32 millim.

1923. Cirphis sinuosa. (Plate XCIII. fig. 14.)

Leucania sinuosa, Moore, Lep. Atk. p. 102 (1882); Hmpsn. Moths Ind. ii. p. 273.

Head and thorax ochreous mixed with dark reddish brown; tegulæ with medial brown line and brown tips; patagia with dark streak on outer edge; legs streaked with brown; abdomen brown, the anal tuft ochreous, the ventral surface irrorated with ochreous. Fore wing ochreous; the costal area slightly irrorated with black; a white streak on medial nervure interrupted at antemedial line and again near end of cell, where it has traces of a slight hook, defined by dark brown streaks with some rufous suffusion below it and sometimes also above it in cell, from lower angle of cell the dark brown fascia runs obliquely to termen below apex, towards which it expands into a triangular patch; subbasal line represented by a black point on costa; antemedial line represented by a black point on costa, then indistinct, irregular, oblique to submedian fold, and strongly angled inwards on vein 1; orbicular and reniform small, brown defined by dark brown, the former rather elongate; postmedial line crenulate with black points on the veins, bent outwards below costa, excurved to vein 4, then oblique: a terminal series of small black lunules; cilia dark brown intersected with ochreous. Hind wing dark brown, the cilia ochreous with a brown line through them; the underside ochreous irrorated with dark brown, a discoidal spot, sinuous postmedial line with short black streaks at the veins, and terminal series of small spots.

Hab. W. China, Washan (*Pratt*), 1 ♂; Punjab, Kulu, Sultanpore (*G. Young*), 1 ♀, Dharmsála (*Hocking*), 1 ♂, 3 ♀; Sikhim (*Lidderdale*), 4 ♀ type. *Exp.* 38 millim.

1924. Cirphis andereggi.

Leucania andereggii, Boisd. Gen. et Ind. Meth. p. 132 (1840); Herr.-Schäff. Eur. Schmett., Noct. f. 326; Staud. Cat. Lep. pal. p. 192.
Leucania valesicola, Guen. Noct. iii. p. 440 (1852).
Leucania cinis, Frr. Neue Beitr. Schmett. pl. 629. f. 3 (1858).
Leucania rupicapra, Led. Wien. ent. Mon. 1860, p. 284, pl. 7. f. 1.
Agrotis engadinensis, Mill. Rev. et Mag. 1873, p. 3; id. Icones, iii. pp. 308, 466, pl. 139. f. 2.

Head and thorax pale olive-brown; abdomen fuscous grey, the anal tuft tinged with rufous. Fore wing pale olive-brown irrorated with black; the cell, the area below it, and apical part of costal area tinged with rufous; the veins strongly streaked with white; a prominent black streak below the cell from base to below origin of vein 2; an oblique black striga above inner margin before middle; a slight black streak in lower angle of cell continued beyond the cell above and below vein 5; a terminal series of small triangular black marks. Hind wing fuscous; the cilia pale brown with a dark line through them; the underside grey tinged with fuscous.

Ab. 1. *cinis*. Much darker; fore wing black-brown with the veins white.

Ab. 2. *engadinensis*. Fore wing with the veins indistinctly streaked with grey, a curved diffused black postmedial line. This may prove to be a distinct species.

Hab. France, Pyrenees; Switzerland, Engadine, 2 ♂, 1 ♀; Bosnia; W. Turkestan, Issyk-Kul. *Exp.* 34 millim.

1925. Cirphis lineata.

Leucania lineata, Ev. Bull. Mosc. 1842, iii. p. 550; Herr.-Schäff. Eur. Schmett., Noct. f. 368; Frr. Neue Beitr. Schmett. pl. 478. f. 1; Staud. Cat. Lep. pal. p. 192.

Head and thorax brownish ochreous slightly mixed with black hairs; palpi fuscous at sides; abdomen greyish fuscous, the anal tuft brownish. Fore wing brownish ochreous irrorated with a few black scales; the veins streaked with white, the median nervure and veins 3, 4 more strongly; a prominent black streak below cell from base to origin of vein 2; a black streak in lower end of cell, continued beyond the cell above and below vein 5; a slight oblique brown shade from termen below apex; a terminal series of black points. Hind wing fuscous, the cilia ochreous; the underside pale irrorated with black; a small discoidal spot.

Hab. Russia, Urals, 1 ♂, 1 ♀. *Exp.* 34 millim.

1926. Cirphis alboradiata, n. sp. (Plate XCIII. fig. 15.)

♂. Head and thorax white tinged with brown; fore tibiæ streaked with black; the tarsi blackish; abdomen grey tinged with fuscous. Fore wing brownish grey slightly irrorated with

fuscous; a black streak below base of cell; median nervure streaked with white; vein 4 below and veins 6, 3, and 1 defined on both sides by white; a fine white line at base of cilia. Hind wing whitish uniformly suffused with brown, the cilia white; the underside whitish irrorated with brown.

Hab. Patagonian Andes, Val de Lago Blanco, 1 ♂ type. *Exp.* 30 millim.

*1927. Cirphis phlebitis. (Plate XCIII. fig. 16.)

Leucania phlebitis, Püng. Soc. Ent. xix. p. 130 (1904).

♂. Head, thorax, and abdomen brown mixed with grey. Fore wing grey-brown irrorated with dark brown, the basal and costal areas rather paler; the inner margin whitish; the veins finely streaked with whitish, the median nervure and veins 3, 4, and base of 5 rather more distinctly so; some diffused slightly darker brown above and below median nervure and beyond lower angle of cell. Hind wing pale suffused with brown, the veins and termen darker; cilia pale with a brown line through them; the underside whitish irrorated with brown.

Hab. Mongolia, Aksu, type † in Coll. Püngeler. *Exp.* 38 millim.

*1928. Cirphis jordana. (Plate XCIII. fig. 17.)

Leucania jordana, Bart. Iris, 1904, p. 158.

Head and thorax ochreous with a slight rufous tinge; sides of palpi and frons fuscous; fore and mid tibiæ and tarsi mostly fuscous; abdomen with diffused fuscous dorsal bands. Fore wing ochreous with a very slight rufous tinge; the veins whitish, very prominently defined by blackish streaks, the cell and submedian fold also with blackish streaks. Hind wing whitish nearly uniformly suffused with fuscous; the underside white.

Hab. Syria, Jordan Valley, type † ♂, ♀ in Coll. Bartel. *Exp.*, ♂ 36, ♀ 42 millim.

1929. Cirphis sicula.

Leucania sicula, Treit. Schmett. Eur. x. 2, p. 90 (1835); Herr.-Schäff. Schmett. Eur., Noct. f. 340; Staud. Cat. Lep. pal. p. 191.
Leucania cyperi, Boisd. Gen. et Ind. Meth. p. 133 (1840).
Leucania albivena, Grasl. Ann. Soc. Ent. Fr. 1852, p. 409, pl. 8. i. f. 1.
Leucania fuscilinea, Grasl. Ann. Soc. Ent. Fr. 1852, p. 411, pl. 8. i. f. 2.

Head and thorax ochreous; palpi and tegulæ irrorated with black; antennæ brown, except at base; abdomen ochreous dorsally tinged with fuscous. Fore wing ochreous sparsely irrorated with black, the veins defined by fine brown streaks; the median nervure white, a blackish streak below its basal half, a black point in lower angle of cell, and a diffused fuscous streak beyond the cell to halfway along vein 5. Hind wing white with some black points on termen, in female suffused with brown, especially on the veins and

terminal area. Underside of fore wing with some fuscous suffusion on disc; hind wing with the costal area irrorated with brown.

Ab. 1. *albivena*. Fore wing with postmedial series of black points.

Ab. 2. *cyperi*. Fore wing without the dark streaks.

Hab. Belgium; S.W. France; Sardinia; Italy, Central and South, Capri (*C. S. Browne*), Sicily, Zeller Coll. *Exp.* 32–34 millim.

1930. Cirphis alopecuri.

Leucania alopecuri, Boisd. Gen. et Ind. Meth. p. 132 (1840); Herr.-Schäff. Eur. Schmett., Noct. f. 369; Staud. Cat. Lep. pal. p. 191.

♂. Head and thorax ochreous white mixed with brown; abdomen whitish slightly tinged with brown, the dorsal crest at base tipped with blackish. Fore wing ochreous suffused with brown, tending to form diffused streaks defining the whitish veins; a white point at lower angle of cell and black point in angle; traces of a curved postmedial series of points sometimes present; a terminal series of points. Hind wing white, the terminal area more or less tinged with ochreous brown; the underside white, the costal area slightly tinged with brown and irrorated with fuscous, some black points on apical part of termen.

Hab. S. Russia, Sarepta (*Christoph*), Zeller Coll.; ? E. Siberia. *Exp.* 30–32 millim.

1931. Cirphis irregularis.

Nonagria irregularis, Wlk. xi. 712 (1857); Hmpsn. Moths Ind. ii. p. 281.
Leucania cœnosa, Snell. Tijd. v. Ent. xx. p. 24, pl. 2. f. 13 (1877).
Axylia abstracta, Swinh. Trans. Ent. Soc. 1890, p. 221, pl. vii. f. 13.
Leucania sepulchralis, Lucas, P. Roy. Soc. Queensl. xv. p. 149 (1900).

Head and thorax brown, more or less completely suffused with fuscous; abdomen brownish grey, the basal crest dark. Fore wing ochreous brown, more or less completely suffused with fuscous; a black streak below base of cell; a fuscous fascia along median nervure, expanding beyond the cell to termen below apex and tornus; some blackish streaks in the interspaces beyond upper angle of cell; a white point at lower angle of cell; traces of a waved postmedial line usually present, incurved below vein 4 and with series of black points beyond it on the veins; an oblique black streak from apex bounding the dark area above; a terminal series of black points usually present. Hind wing ochreous white, the terminal area tinged with brown or fuscous; the underside with the costal area and termen tinged with fuscous.

Hab. Punjab, Kangra, 1 ♂; Burma, Moulmein (*Clerck*), 1 ♀ type, Rangoon, 1 ♂, Thayetmyo (*Cory*), 1 ♀, Bhamo, 1 ♀ type *abstracta*; Prov. Wellesley (*Ridley*), 1 ♂; Singapore (*Ridley*), 1 ♂, 2 ♀; Borneo, 1 ♂; Java; Queensland, Brisbane (*Turner*), 1 ♂, 1 ♀. *Exp.* 26–38 millim.

1932. Cirphis cinereicollis. (Plate XCIII. fig. 18.)

Leucania cinereicollis, Wlk. xv. 1659 (1858).
Leucania solita, Druce, Biol. Centr.-Am., Het. i. p. 262 (part.), nec Wlk.

Head and thorax ochreous; palpi dark at sides; tegulæ with three dark lines; patagia edged with dark scales above; dorsal crests of thorax and abdomen dark at tips; abdomen ochreous irrorated with brown. Fore wing ochreous, tinged with rufous and irrorated with a few dark scales; the veins whitish defined by fine brown streaks; the interspaces with brown streaks; a slight black streak below base of cell and a fuscous fascia on median nervure continued to termen above vein 4; a black point below origin of vein 2; a small white spot at lower angle of cell; a curved postmedial series of black points on the veins and a terminal series; an oblique brown shade from termen just below apex. Hind wing semihyaline white; the underside with the costal area tinged with brown and irrorated with dark scales, the termen with a series of black points from apex to vein 2.

Hab. Costa Rica, Irazu (*Rogers*), 2 ♂, Godman-Salvin Coll.; Cuba; Guadeloupe, 1 ♂; Brazil, Petropolis (*Doer*), 1 ♀, São Paulo (*D. Jones*), 2 ♀; Paraguay, Sapucay (*Foster*), 8 ♂, 4 ♀; Argentina, Goya (*Perrins*), 1 ♂, 3 ♀, Florenzia (*Wagner*), 1 ♂. Type † in Mus. Oxon. *Exp.* 34–48 millim.

1933. Cirphis punctosa.

Simyra punctosa, Treit. Schmett. v. 2. p. 287 (1825); Frr. Neue Beitr. Schmett. pl. 406. f. 4; Herr.-Schäff. Eur. Schmett., Noct. f. 310; Staud. Cat. Lep. pal. p. 192.

Head and thorax grey mixed with rufous; abdomen ochreous white. Fore wing ochreous, largely suffused with rufous and with some fuscous irroration on costal and inner areas; a more prominent rufous shade in, below, and beyond cell; some fuscous irroration on median nervure and base of veins arising from it, the other veins slightly streaked with whitish; a slight black streak below base of cell; an indistinct highly dentate antemedial line, obsolete on costal area; a white point at lower angle of cell; postmedial line black, bent outwards below costa, then represented by a series of points on the veins, oblique below vein 4; the terminal area deep rufous; an oblique pale fascia from apex; a terminal series of black points; cilia intersected with white. Hind wing pure white, the terminal area slightly tinged with ochreous; the underside with the costal area irrorated with brown; a terminal series of black points from apex to vein 2.

Hab. S. France, Zeller and Leech Colls.; Spain; Sicily; Algeria; Asia Minor, Pontus; Syria; W. Turkestan, Turcomania, 1 ♀. *Exp.* 32–38 millim.

Larva. Mill. Icones, ii. p. 253, pl. 77. f. 10.

Whitish with numerous fine dark lines; dorsal area yellowish with fine dorsal line and prominent black subdorsal line interrupted between the segments; head yellowish. Food-plants, Grasses. 4.

1934. Cirphis putrescens.

Noctua putrescens, Geyer, Samml. Eur. Schmett., Noct. ff. 730–1 (1827); Herr.-Schäff. Eur. Schmett., Noct. ff. 301, 327–8; Staud. Cat. Lep. pal. p. 192.

Noctua boisduvali, Dup. Lép. Fr. vii. p. 79, pl. 105. f. 6 (1827).

Head and thorax greyish, more or less tinged with ochreous and mixed with brown; palpi blackish at sides; tegulæ with medial black line; a black streak near upper edge of patagia; abdomen ochreous white, slightly irrorated with brown. Fore wing grey more or less tinged with ochreous, and with some black irroration, especially on costal and inner areas; a black streak below base of cell and an oblique streak above inner margin before middle; the veins white defined by fine purple-brown streaks diffused on each side of median nervure and medial part of vein 1, the interspaces also with purple-brown streaks; a white point at lower angle of cell; the postmedial line bent outwards below costa, then represented by a series of points, oblique below vein 4; a triangular brown shade from termen below apex conjoined to another triangular shade above tornus; a terminal series of black points; cilia brown intersected with white. Hind wing white; a terminal series of black points; the terminal area in female suffused with brown; the underside with the costal area irrorated with black, a postmedial series of slight black streaks on the veins.

Hab. Britain, Leech Coll.; W. & S. France, Zeller Coll.; Spain; Italy, Capri (*C. S. Browne*); Sicily; Algeria; Dalmatia; Istria; ? W. Turkestan, Turcomania, Issyk-Kul. *Exp.* 32–36 millim.

Subsp. *canariensis*, Rebel, Ann. Nat. Hofm. Wien. ix. p. 58 (1894).

Smaller; fore wing darker, on underside with prominent discoidal point.

Hab. Canaries, Fuerventura.

Larva. Meyr. Brit. Lep. p. 70; Barrett, Lep. Brit. v. p. 150, pl. 203. f. 2; Millière, Icones, ii. p. 254, pl. 77. f. 11.

Greyish ochreous to reddish brown; dorsal line pale, dark-edged, almost white on thoracic somites; subdorsal and lateral lines whitish, dark-edged, separated by an ochreous-brown area; spiracular line brown; subspiracular line pale; head grey with darker markings. Food-plants, Grasses. 10–2.

*1935. Cirphis herrichi.

Leucania herrichii, Herr.-Schäff. Eur. Schmett., Noct. ii. p. 238, Noct. f. 341 (1845); Staud. Cat. Lep. pal. p. 192.

♂. Head and thorax pale ferruginous mixed with fuscous; abdomen grey-brown, tinged with rufous and irrorated with fuscous. Fore wing greyish, almost entirely tinged with ferruginous red, and thickly irrorated, and in places suffused, with fuscous; a black streak below base of cell; the antemedial line oblique to median nervure, excurved below cell and above inner margin, angled inwards on vein 1; orbicular and reniform represented by slight

ferruginous marks, the latter with white point below it at lower angle of cell; postmedial line strongly dentate, bent outwards below costa and oblique below vein 4; the veins of terminal area with dark streaks; subterminal line only represented by the area beyond it being darker, arising obliquely from termen below apex, angled inwards in discal and submedian folds, excurved at middle; cilia fuscous intersected with ochreous. Hind wing ochreous white, the veins and terminal area tinged with fuscous brown; cilia ochreous; the underside with the costal and terminal areas tinged with ochreous and irrorated with fuscous.

Hab. Asia Minor. Bithynia, Pontus, Taurus; Syria, Dead Sea, in Coll. Püngeler. *Exp.* 40 millim.

1936. Cirphis phæa. (Plate XCIII. fig. 19.)

Leucania phæa, Hmpsn. Ann. S. Afr. Mus. ii. p. 275 (1902).

♂. Head and thorax brown largely mixed with fuscous; abdomen brownish white, ventrally irrorated with black. Fore wing pale grey-brown very thickly irrorated with black; the veins slightly paler and defined by very slight dark streaks; the interspaces of terminal area with slight dark streaks; median nervure with a diffused fuscous streak extending to just beyond lower angle of cell, where there is a white point; an indistinct irregularly crenulate postmedial line, bent outwards below costa and oblique below vein 4. Hind wing white, the termen tinged with brown; the underside with the costal area ochreous, irrorated with black and on terminal area down to vein 2.

Hab. Natal, Estcourt (*Hutchinson*), 1 ♂; Cape Colony, Transkei (*Miss F. Barrett*), 1 ♂ type. *Exp.* 34 millim.

1937. Cirphis leucosticha, n. n.

Leucania insulicola, Saalm. Lep. Madag. p. 254, f. 181 (1891), nec Guen.

Head and thorax purplish grey or brownish ochreous mixed with fuscous; frons with blackish lateral bars; tegulæ with three dark lines; abdomen ochreous white, dorsally tinged with brown towards extremity. Fore wing pale ochreous more or less tinged with purplish red, especially in and beyond end of cell, and sparsely irrorated with black; the veins whitish defined by fine purple-brown streaks, the interspaces also tinged with purple-brown; median nervure slightly defined by fuscous above and below, extending slightly beyond lower angle of cell, where there is a white point; traces of an antemedial line usually present, oblique from costa to just below cell, where there is a black point; a postmedial series of black points, bent outwards below costa and oblique below vein 4, usually connected by an indistinct crenulate line; a triangular brown shade from termen below apex; a terminal series of black points; cilia intersected with whitish. Hind wing semi-

hyaline white, the veins and termen down to vein 2 tinged with brown; the underside with the costal area tinged with purplish and irrorated with black; a terminal series of black points from apex to vein 2.

Hab. Br. E. Africa, Eb Urru (*Betton*), 2 ♀; Natal, Durban (*Gooch*, *Leigh*), 2 ♂, 1 ♀, type; Mauritius, Cuerpipe (*Tulloch*), 1 ♀. *Exp.* 36 millim.

1938. **Cirphis latiuscula.** (Plate XCIII. fig. 20.)

Leucania latiuscula, Herr.-Schäff. Corresp.-Blatt zool. min. Ver. Regensb. 1868, p. 148.
Heliophila subpunctata, Harv. Bull. Buff. Soc. Nat. Sci. iii. p. 8 (1875); Smith, Cat. Noct. N. Am. p. 189.
Leucania punctifera, Möschl. Ver. z.-b. Wien, 1880, p. 389.
Leucania senescens, Möschl. Abh. Senck. Ges. xvi. p. 142 (1890).
Leucania tinila, Schaus, Trans. Am. Ent. Soc. xxi. p. 233 (1894).
Leucania complicata, Streck. Lep. Rhop. & Het., Suppl. i. p. 9 (1898).
Leucania misteca, Schaus, J. N.Y. Ent. Soc. vi. p. 115 (1898); Druce, Biol. Centr.-Am., Het. ii. p. 568.
Leucania orizaba, Schaus, J. N.Y. Ent. Soc. vi. p. 115 (1898); Druce, Biol. Centr.-Am., Het. ii. p. 568.
Leucania extincta, Druce, Biol. Centr.-Am., Het. i. p. 261 (part.), nec Guen.

Head and thorax ochreous mixed with fuscous brown; tegulæ with three dark lines; abdomen ochreous irrorated with brown, the dorsal crest dark. Fore wing pale greyish or ochreous irrorated with black, the veins white irrorated with black defined by fine brown streaks; the interspaces with fine brown streaks; the median nervure with slight dark streak; a white point at lower angle of cell and a black point below origin of vein 2; a postmedial series of black points, bent outwards below costa, excurved to vein 4, then very oblique; a terminal series of black points. Hind wing semihyaline white, the veins and termen irregularly tinged with brown in most specimens; the underside with the costal area irrorated with brown, a terminal series of black points on costal half.

Ab. 1. *orizaba*. Hind wing largely suffused with fuscous.

Hab. U.S.A., Georgia (*Abbot*), 1 ♂, Texas, 1 ♀ type *subpunctata*; Mexico, Oaxaca, type † ♂ *misteca* in Coll. Schaus, Orizaba, type † ♂ *orizaba* in Coll. Schaus, Jalapa (*Hoege*), 1 ♂; Guatemala, Las Mercedes (*Champion*), 1 ♀; Panama, Bugaba (*Champion*), 1 ♂; Bermuda, Challenger Coll., 1 ♂, 4 ♀; Jamaica (*Kaye*), 2 ♂, 2 ♀; Cuba; Porto Rico; St. Vincent (*H. H. Smith*), 1 ♂; Grenada, 1 ♂; Barbados (*Frampton*), 3 ♂; Surinam; Br. Guiana, Rockstone (*Kaye*), 1 ♂, Potaro R. (*Kaye*), 2 ♀; Brazil, Castro Paraña, type † ♂ *tinila* in Coll. Schaus; Peru, Hauncabamba, 1 ♂. *Exp.* 38–42 millim.

1939. **Cirphis tritonia**, n. sp. (Plate XCIII. fig. 21.)

Head and thorax brownish ochreous; palpi with some fuscous scales at sides; abdomen ochreous. Fore wing brownish ochreous, slightly irrorated with fuscous and with black on costal and inner

areas; the interspaces of terminal area with dark streaks; a black point below origin of vein 2; a white point at lower angle of cell, with some blackish scales before and beyond it; an indistinct, obliquely curved, dentate, postmedial line produced to points on the veins; a terminal series of points; a slight oblique dark shade from termen below apex. Hind wing semihyaline white, the veins and termen tinged with ochreous; the underside with the costal area tinged with ochreous and irrorated with brown.

Hab. Colombia, Minca (*H. H. Smith*), ♂ in Coll. Druce; Brazil, Amazons, R. Jurua (*Trail*), 1 ♀ type. *Exp.* 48 millim.

1940. Cirphis atrimacula. (Plate XCIII. fig. 22.)

Leucania atrimacula, Hmpsn. Ann. S. Afr. Mus. ii. p. 275 (1902).

♀. Head and thorax pale ochreous mixed with a few black scales; abdomen whitish, dorsally tinged with fuscous. Fore wing pale ochreous, sparsely irrorated with black; a black point at base; a white point at lower angle of cell, with a black point before it in the angle and a small black patch beyond the angle with some diffused rufous beyond and below it; a postmedial series of black points bent outwards below costa and oblique below vein 4; an oblique fuscous shade from termen below apex; a prominent terminal series of black points. Hind wing ochreous white, the terminal area suffused with fuscous; a terminal series of black points; the underside with the costal and terminal areas irrorated with black.

Hab. Natal, Durban (*Gooch*), 1 ♀ type. *Exp.* 30 millim.

1941. Cirphis albistigma. (Plate XCIII. fig. 23.)

Leucania albistigma, Moore, P. Z. S. 1881, p. 337, pl. 37. f. 9; Hmpsn. Moths Ind. ii. p. 275.

Head and thorax grey to pale olive-brown mixed with dark brown; tegulæ with two dark lines; abdomen grey, dorsally tinged with fuscous. Fore wing pale olive-brown to grey-brown, more or less thickly irrorated with fuscous; the veins of costal area defined by fine brown streaks hardly visible except in the paler specimens, the interspaces also streaked with brown towards apex; a slight black streak below base of cell; a slight fuscous shade on each side of median nervure, extending beyond the cell to the triangular brown shade from termen below apex; the antemedial line represented by obliquely placed black points on costa and below cell; a small rather V-shaped white spot with brown centre; a postmedial series of black points bent outwards below costa and oblique below vein 4, sometimes with traces of a crenulate line before it; a terminal series of black points. Hind wing semihyaline white, the veins, termen, and inner area tinged with brown; the underside with the costal and terminal areas irrorated with brown.

Hab. India (*Hearsay*), 1 ♂, 1 ♀; Sikhim; Madras, Gooty (*Campbell*), 2 ♀, Nilgiris (*Lindsay*, *Hampson*), 4 ♂, 2 ♀, Coimbatore (*Walhouse*), 1 ♀. *Exp.* 32–38 millim.

*1942. Cirphis putrida. (Plate XCIII. fig. 24.)

Leucania putrida, Staud. Stett. ent. Zeit. 1889, p. 48; id. Cat. Lep. pal. p. 192.

Head and thorax brownish grey mixed with fuscous; tegulæ with more or less distinct dark medial line; abdomen grey-white irrorated with fuscous. Fore wing pale brownish grey, slightly irrorated with fuscous; a broad fuscous fascia above and below median nervure to beyond cell; antemedial line represented by dark points on the veins with traces of an excurved line below cell; a white point at lower angle of cell; postmedial line strongly dentate, oblique below vein 4; terminal area fuscous, with the veins crossing it grey, running obliquely from termen just below apex to discal fold, then excurved; a terminal series of small black lunules. Hind wing semihyaline white; the veins brown; the termen tinged with brown; a terminal series of black points; the underside with the costal area tinged with ochreous and irrorated with fuscous.

Hab. W. Turkestan, Ferghana, Issyk-Kul; E. Turkestan, Ili; Mongolia, Aksu, in Coll. Püngeler. *Exp.* 34–38 millim.

Subsp. *palæstinæ*, Staud. Iris, x. p. 174, pl. iv. ff. 11, 12 (1897).

♀. Head, thorax, and abdomen ochreous; tegulæ without dark line; fore wing ochreous; the fuscous fascia confined to medial area above median nervure; the postmedial line hardly traceable, except as a series of points on the veins; the dark terminal area reduced to dentate marks in the interspaces. Hind wing yellowish white, the terminal area suffused with fuscous.

Hab. Syria. *Exp.* 40 millim.

1943. Cirphis zeæ.

Noctua zeæ, Dup. Lép. Fr. vii. 1. p. 363, pl. 122. f. 4 (1827); Herr.-Schäff. Eur. Schmett., Noct. ff. 311, 315; Staud. Cat. Lep. pal. p. 192.
Leucania indistincta, Christ. Rom. Mém. iii. p. 79, pl. 4. f. 5 (1887).

Head and thorax brownish ochreous mixed with grey; palpi and legs irrorated with fuscous; tarsi blackish, with pale rings; abdomen white, tinged with ochreous. Fore wing brownish ochreous suffused and irrorated with grey, the veins irrorated with fuscous; the antemedial line represented by dark points on the veins or traces of a waved line; a white point at lower angle of cell; a more or less prominent dentate postmedial line with more distinct dark points at the veins, bent outwards below costa and oblique below vein 4; an oblique dark shade from termen below apex. Hind wing white, the termen with some black points; the underside with slight dark irroration on costal and apical areas, a postmedial series of points on costal half.

Ab. 1. *indistincta*. Hind wing with the veins and termen tinged with fuscous.

Hab. S. France, Montpellier, Zeller, Frey, and Leech Colls.; Spain, Andalusia; Italy; Dalmatia; Greece; Egypt; W. Turkestan, Turcomania, 3 ♀, Ferghana, Issyk-Kul. *Exp.* 32–38 millim.

1944. Cirphis scirpi.

Leucania scirpi, Dup. Lép. Fr., Suppl. iii. p. 349, pl. 32. f. 3 (1836); Staud. Cat. Lep. pal. p. 191.
Leucania dactylidis, Boisd. Gen. et Ind. Meth. p. 133 (1840); Dup. Lép. Fr., Suppl. iv. p. 226, pl. 69. f. 6; Herr.-Schäff. Eur. Schmett., Noct. f. 318.
Leucania montium, Boisd. Gen. et Ind. Meth. p. 133 (1840); Frr. Neue Beitr. Schmett. v. pl. 395. f. 2; Herr.-Schäff. Eur. Schmett., Noct. ii. f. 317.
Leucania caricis, Herr.-Schäff. Eur. Schmett., Noct. ff. 324–5 (nec Treit.).

Head and thorax whitish mixed with brown; abdomen whitish tinged with brown. Fore wing grey, thickly irrorated with dark brown; a white point at lower angle of cell, with black point before it and traces of points beyond it; an indistinct curved post-medial series of dark points on the veins. Hind wing white, the veins and termen slightly tinged with brown; the underside with the costal and terminal areas irrorated with brown, some black points on apical part of termen.

Ab. 1. *dactylidis*. Fore wing tinged with reddish.

Ab. 2. *montium*. Fore wing more thickly irrorated with fuscous; hind wing wholly tinged with fuscous.

Hab. France, Ardèche, Zeller Coll.; W. Germany; Austria, Meran, Leech Coll.; Switzerland; Spain, Leech Coll.; Sardinia; Italy; Dalmatia; Asia Minor, Taurus Mts.; Syria, Mardin, Palestine. *Exp.* 32 millim.

Larva. On Grasses.

1945. Cirphis ciliata. (Plate XCIII. fig. 25.)

Leucania ciliata, Wlk. ix. 110 (1856).
Tæniocampa assimilis, Wlk. xv. 1708 (1858).

Head and thorax pale grey-brown irrorated with black scales; palpi blackish at sides; frons with black bar; tegulæ with three black lines; abdomen grey tinged with brown, the anal tuft with rufous, the ventral surface white irrorated with brown, a sublateral series of black points. Fore wing pale grey-brown thickly irrorated with black; the costal edge whitish; subbasal line represented by a black point on costa; traces of an obliquely waved antemedial line with series of black points on it; a white point at lower angle of cell; a double postmedial series of black points on the veins, bent outwards below costa and incurved below vein 4; a terminal series of black points. Hind wing pale suffused with fuscous brown, paler towards base; cilia white at tips; the underside with the costal and

terminal areas irrorated with brown, a curved postmedial series of short streaks on the veins.

Hab. New South Wales, Moreton Bay (*Diggles*), 1 ♂ type *assimilis*, Sydney (*Lambert*, *Raynor*), 2 ♂, 1 ♀, type. *Exp.* 32 millim.

1946. Cirphis fragilis. (Plate XCIII. fig. 26.)

Spælotis fragilis, Butl. P. Z. S. 1883, p. 160; Hmpsn. Moths Ind. ii. p. 275.

Head and thorax grey-brown mixed with grey; palpi blackish at sides; abdomen greyish or with a rufous tinge in male, yellowish white in female. Fore wing grey tinged with brown and irrorated with fuscous: antemedial line indistinct, oblique and dentate from costa to submedian fold, then angled inwards on vein 1; a small white spot at lower angle of cell; postmedial line minutely dentate, bent outwards below costa, incurved at discal fold, oblique below vein 4, and incurved at submedian fold: a terminal series of minute points often present. Hind wing whitish slightly tinged with brown, the veins and termen brown; the underside whitish, the costal area tinged with grey-brown, some blackish lunules on termen.

Hab. Punjab, Kulu, Sultanpore (*G. Young*), 4 ♂, 4 ♀, (*Hocking*) 1 ♂, 2 ♀, Simla (*Swinhoe*, *Harford*), 3 ♂, 1 ♀, type, Dharmsála (*Hocking*), 3 ♂, 1 ♀, Kangra Valley (*Dudgeon*), 1 ♀; Centr. Provinces. *Exp.* 30–32 millim.

Larva. Does much damage to wheat in Chindwara Distr., C. Provinces.

1947. Cirphis opaca. (Plate XCIII. fig. 27.)

Leucania opaca, Staud. Iris, xii. p. 374, pl. 6. f. 13 (1900); id. Cat. Lep. pal. p. 192.

Head, thorax, and abdomen grey mixed with brown. Fore wing grey-white thickly irrorated with brown; traces of an antemedial line oblique from costa to submedian fold, then angled inwards on vein 1; a white point at lower angle of cell with some fuscous before and beyond it; an indistinct dentate postmedial line bent outwards below costa and oblique below vein 4. Hind wing whitish, uniformly suffused with brown; the underside whitish irrorated with brown.

Hab. E. Turkestan, Korla, 1 ♂, 1 ♀. *Exp.*, ♂ 32, ♀ 36 millim.

1948. Cirphis crenulata, n. sp. (Plate XCIII. fig. 28.)

♂. Head and thorax pale brown; sides of palpi and frons blackish; tegulæ with broad black medial line, patagia with black streak on outer edge; legs slightly streaked with blackish; abdomen brownish grey, dorsally tinged with fuscous before the ochreous anal tuft. Fore wing grey, tinged with rufous and slightly irrorated with

black; the veins whitish irrorated with black; a diffused black fascia below base of cell; traces of an antemedial line, with black points on subcostal and median nervures, just below the cell and on vein 1; the lower part of terminal half of cell suffused with black, extending beyond its extremity between veins 3 and 5; a white point at lower angle of cell; a rather indistinct crenulate postmedial line with black points on the veins, bent outwards below costa and oblique below vein 4; a subterminal series of ill-defined black marks; a terminal series of small black spots. Hind wing whitish almost uniformly suffused with fuscous, the cilia white; the underside white, with postmedial series of black points on the veins and terminal series from apex to vein 2.

♀. Tegulæ without black line and patagia without streak; fore wing rather redder except costal area, the black markings absent except the points representing the ante- and postmedial lines.

Hab. Persian Gulf, Fao (*Cumming*), 1 ♂, 1 ♀, type. *Exp.* 40 millim.

1949. **Cirphis mesotrosta.** (Plate XCIII. fig. 29.)

Leucania mesotrosta, Püngl. Iris, xii. p. 295, pl. 9. f. 9 (1899); Staud. Cat. Lep. pal. p. 192.

Head and thorax grey-brown with a slight rufous tinge; abdomen brownish grey. Fore wing grey-brown with a rufous tinge and slight black irroration, especially on the veins; traces of a waved antemedial line; a prominent somewhat lunulate white spot at lower angle of cell on a diffused black patch; postmedial line arising from a black point on costa, somewhat dentate and produced to black streaks on the veins, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4; a terminal series of black points. Hind wing fuscous brown; the cilia ochreous white, with a dark line through them; the underside pale thickly irrorated with black, a small discoidal spot, diffused sinuous postmedial line, and some striæ on termen.

Hab. Tibet, Kuku-noor, 1 ♂, 1 ♀, Amdo. *Exp.* 36–40 millim. Type † in Coll. Püngeler.

1950. **Cirphis unipuncta.**

Noctua unipuncta, Haw. Lep. Brit. p. 174 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 80; Harr. Inj. Ins. p. 627, ff. 274–6; Riley, 2nd Rep. Ins. Mo. p. 37, ff. 11, 14–16; Druce, Biol. Centr.-Am., Het. i. p. 260; Hmpsn. Moths Ind. ii. p. 275; Staud. Cat. Lep. pal. p. 193; Smith, Cat. Noct. N. Am. p. 189.
Spælotis punctulata, Blanch. Gay's Chile, Ins. vii. p. 74 (1852).
Leucania extranea, Guen. Noct. i. p. 77 (1852).
Leucania antica, Wlk. ix. 100 (1856).
Leucania convecta, Wlk. xi. 711 (1857).
Leucania separata, Wlk. xxxii. 626 (1865).
Leucania consimilis, Moore, P. Z. S. 1881, p. 336, pl. 37. f. 19.
Leucania trifolii, Butl. Trans. Ent. Soc. 1882, p. 114.
Leucania saccharivora, Butl. Trans. Ent. Soc. 1882, p. 115.
Leucania adultera, Schaus, Trans. Am. Ent. Soc. xxi. p. 232 (1894).

Head and thorax red-brown; tegulæ with the basal half pale, bounded by a dark line; abdomen fuscous brown, the anal tuft and ventral surface ochreous. Fore wing red-brown slightly striated and irrorated with fuscous, the costal area more ochreous; the antemedial line represented by black points on costa, median nervure, and vein 1; the orbicular and reniform rounded, pale reddish and very obscurely defined; a white point at lower angle of cell, often with a black point on each side of it; a postmedial series of black points bent outwards below costa, excurved to vein 4, then oblique; an oblique dark streak from apex to vein 5; a terminal series of black points. Hind wing dark brown, the interspaces white towards base; the cilia white; the underside whitish, the costal and terminal areas more ochreous and irrorated with brown, a curved postmedial series of black points and a terminal series on apical half.

Ab. 1. *saccharivora*. Much redder.

Ab. 2. *punctulata*. More grey-brown; the striation of the fore wing much more prominent and the stigmata more distinct.

Hab. Canada, Hudson's Bay, St. Martin's Falls (*Barnston*) 1 ♂, 3 ♀, (*Norman*) 3 ♂; U.S.A., New York, 5 ♂, 2 ♀, Illinois, 1 ♂, Alabama, 1 ♂, Kansas, 1 ♀, Texas, Colorado, Denver (*Oslar*), 1 ♂, 2 ♀, New Mexico, Arizona, Prescott (*Kunzé*), 1 ♀; Mexico, Jalapa (*Trujillo*), 4 ♀, Cuernavaca (*Smith*), 1 ♀, Milpas (*Forrer*), 2 ♂, Mexico City (*Hoege*), 1 ♂; Guatemala (*Rodriguez*), 1 ♀; Costa Rica (*Underwood, Rogers*), 5 ♂, 3 ♀; Panama, Chiriqui (*Champion*), 3 ♀, Godman-Salvin Coll.; Jamaica (*Kaye*), 1 ♀; Cuba; Venezuela 4 ♀ type *antica*; Brazil, Castro Paraña, type † ♀ *adultera* in Coll. Schaus, São Paulo (*D. Jones*), 2 ♀; Paraguay, Sapucay (*Foster*), 2 ♀; Argentina, Goya (*Perrins*), 1 ♂, 1 ♀; Chile, type *punctulata* in Mus. Paris, Talcahuano (*J. J. Walker*) 1 ♂, (*Edmonds*) 3 ♂, 3 ♀, types *saccharivora* and *trifolii*; Azores (*J. J. Walker*), Horta Fayal, 2 ♀, Flores, 3 ♂; Madeira (*Mungo Park*) 1 ♀, (*Wollaston*) 4 ♂; Canaries (*Leech*), 2 ♂; Britain; France; Spain; Portugal; S.E. Siberia, Ussuri; Japan, Yokohama (*Pryer*), 1 ♂, Tokio (*Maries*), 1 ♀; N. China, Shanghai (*Fortune*), 1 ♀ type *separata*, Foochow (*C. B. Rickett*), 1 ♀; Hongkong (*J. J. Walker*), 1 ♂; C. China, Kiukiang (*Pratt*), 1 ♂, 1 ♀, Ichang (*Pratt*), 1 ♀; W. China (*Pratt*), Ta-chien-lu, 1 ♀, Kia-ting-fu, 1 ♀, Chia-kou-ho, 1 ♂, Washan, 1 ♂; Kashmir (*McArthur*), Narkundah, 1 ♂, 1 ♀, Kuijar, 1 ♂, Nubra, 1 ♂, Jalauri Pass, 1 ♂; Punjab, Kulu, Sultanpur (*G. Young*), 4 ♂, Murree (*Yerbury*), 1 ♀, Cambellpur (*Yerbury*), 1 ♂, 1 ♀, Dharmsála (*Hocking*), 4 ♂, 2 ♀, Jubbulpur (*F. Butler*), 1 ♀, Manpuri, 1 ♂; Sikhim (*Lidderdale*), 1 ♂; Bengal, Calcutta, 1 ♀; Bombay, 1 ♂; Madras, Nilgiris (*Hampson*), 3 ♀; Java (*Horsfield*), 4 ♂, 2 ♀; N. S. Wales, Moreton Bay (*Diggles*), 2 ♂ type *convecta*, Sydney (*Raynor*), 5 ♂, 2 ♀; Victoria, Melbourne (*J. J. Walker*), 1 ♂, Gisborne (*Lyell*), 1 ♀; New Zealand, Auckland (*Sinclair, Bolton, Oxley, Skellon*), 7 ♂, 6 ♀. *Exp.* 38–50 millim.

Larva. Head brown, reticulate with dark brown and with curved vertical bands. Body green or brown, strigose with a darker shade. Dorsal line nearly lost in a broad dorsal dark powdering, white, dotted; subdorsal line more continuous, its upper dark border diffuse; lateral line white, between it and substigmatal band dark brown; substigmatal band broad, white on the edges, reddish blotched. Leg-shields brown. Food-plants: Grasses and cereals. 5–6.—H. G. D.

1951. Cirphis corrugata. (Plate XCIII. fig. 30.)

Leucania corrugata, Hmpsn. Moths Ind. ii. p. 278 (1894).

♀. Head, thorax, and abdomen pale brownish ochreous; abdomen with the dorsal crest blackish, the ventral surface irrorated with black. Fore wing pale brownish ochreous, slightly irrorated with black and with some rufous suffusion in and beyond end of cell; antemedial black points on the veins; a small elliptical white spot at lower angle of cell, with ill-defined yellowish discoidal spot above it; postmedial line indistinct, minutely crenulate with black points at the veins, bent outwards below costa and oblique below vein 4; some black points on termen towards apex. Hind wing ochreous whitish suffused with fuscous, rather paler on basal, costal, and inner areas; cilia ochreous white, with brownish line through them. Underside ochreous whitish irrorated with fuscous; fore wing with the cell slightly suffused with fuscous, an indistinct oblique postmedial line; both wings with some points on termen.

Hab. Punjab, Simla, Kau Mt. (*Harford*), 1 ♀ type. *Exp.* 40 millim.

*1952. Cirphis arcupunctata.

Leucania arcupunctata, Mssn. Stübel's Reise, p. 138, pl. vi. f. 1 (1890).

Head, thorax, and abdomen brownish ochreous. Fore wing brownish ochreous; the veins streaked with black, the submedian fold with a rufous streak, the interspaces of terminal area with diffused fuscous streaks; orbicular represented by two black points on its upper edge, the reniform by four black points at its angles; a curved postmedial series of prominent black points on the veins and a terminal series. Hind wing brownish ochreous, the terminal area suffused with fuscous.

Hab. Ecuador, Antisana, 12,000′. *Exp.* 48 millim. This species is unknown to me; structural characters examined by Prof. Karsch.

1953. Cirphis denticula.

Leucania denticula, Hmpsn. Ill. Het. B. M. ix. p. 90, pl. 161. f. 10 (1893); id. Moths Ind. ii. p. 273.

♀. Head and thorax ochreous white slightly tinged with reddish brown; abdomen ochreous white, the dorsal crest blackish. Fore

wing ochreous white slightly tinged with rufous and irrorated with fuscous; the antemedial line brownish with fuscous points on the veins, obliquely sinuous from costa to submedian fold, then angled inwards on vein 1; the orbicular represented by a small black-brown spot in cell, the reniform by a larger somewhat quadrate spot; postmedial line brown with black points at the veins, crenulate, bent outwards below costa and oblique below vein 4; a slight triangular shade from termen below apex; a terminal series of black points. Hind wing fuscous brown, the costal area and cilia ochreous white; the underside ochreous white irrorated with fuscous, the inner half of terminal area suffused with fuscous, a small discoidal spot, curved postmedial line, and some points on termen.

Hab. Ceylon, Pundaloya (*Green*), 1 ♀ type. *Exp.* 44 millim.

1954. Cirphis pastea, n. sp. (Plate XCVI. fig. 13.)

♀. Head and thorax ochreous white mixed with dark brown; palpi brownish at sides; frons with brown bar; tegulæ with three brown lines; patagia with some black scales near upper edge; tarsi with dark rings; abdomen ochreous white, dorsally suffused with brown, ventrally irrorated with black. Fore wing ochreous white irrorated and striated with rufous and dark brown; some brown suffusion below middle of costa; orbicular represented by a small round brown spot, the reniform by a large rather diffused lunule; a diffused brown fascia beyond lower angle of cell connected with a triangular shade from termen below apex; a curved postmedial series of black points with an ill-defined brown shade beyond them; a terminal series of black points; cilia ochreous white intersected with brown. Hind wing whitish tinged with brown, especially on terminal area; cilia white with a brownish line through them; the underside white irrorated with brown, a black discoidal lunule and terminal series of points.

Hab. Assam, Khásis, 1 ♀ type. *Exp.* 36 millim.

1955. Cirphis yu.

Leucania yu, Guen. Noct. i. p. 78 (1852).
Leucania exempta, Wlk. xi. 710 (1857); Hmpsn. Ill. Het. B. M. ix. p. 90, pl. 161. f. 9; id. Moths Ind. ii. p. 273.
Leucania costalis, Moore, P. Z. S. 1877, p. 603, pl. 59. f. 11.

Head, thorax, and abdomen ochreous white slightly tinged with brown. Fore wing ochreous white irrorated with fuscous; the cell defined below and beyond extremity by rufous and fuscous suffusion; traces of a waved antemedial line, oblique from costa to submedian fold, then angled inwards on vein 1; orbicular represented by a small black spot in cell; a black point at lower angle of cell; postmedial line rather indistinct, crenulate, bent outwards below costa, incurved at discal fold, and oblique below vein 4; a slight oblique shade from termen below apex; a terminal series of black points.

Hind wing ochreous white suffused with brown, especially on the veins and termen. Underside with black spot on costa of fore wing beyond middle and terminal series of black points.

Hab. Loo-choo Is., 2 ♂ (*Pryer*); Sikhim, 1 ♀; Bombay, Canara (*Ward*), 1 ♀; Madras, Malabar; Ceylon (*Templeton, Mrs. Lindesay*), 2 ♀ type *exempta*; Burma; Andamans, 1 ♀ type *costalis*; Singapore (*Ridley*), 1 ♀; Borneo, Sarawak (*Bartlett*), 1 ♀; Philippines, Manilla. *Exp.* 34–40 millim.

1956. Cirphis semiusta.

Leucania semiusta, Hmpsn. Ill. Het. B. M. viii. p. 69, pl. 144. f. 17 (1891); id. Moths Ind. ii. p. 274.

♀. Head and thorax ochreous with a slight purplish-brown tinge; tegulæ with the basal half irrorated with fuscous; abdomen ochreous, dorsally slightly tinged with fuscous. Fore wing ochreous slightly irrorated with fuscous; some purplish-brown suffusion in and below cell, expanding on terminal area to below apex and near tornus; the antemedial line represented by a slight angled dark mark in cell; an elliptical ochreous discoidal spot; a postmedial series of dark points, oblique below vein 4; a fuscous triangular shade from termen below apex. Hind wing whitish, suffused with fuscous except on basal and inner areas; cilia white. Underside white irrorated with fuscous; fore wing with some fuscous suffusion in, below, and beyond cell, leaving a white discoidal spot; both wings with terminal series of black points.

Hab. Madras, Nilgiris (*Hampson*), 1 ♀ type. *Exp.* 38 millim.

1957. Cirphis modesta. (Plate XCIII. fig. 31.)

Leucania modesta, Moore, P. Z. S. 1881, p. 335, pl. 37. f. 11; Hmpsn. Moths Ind. ii. p. 274.

♂. Head and thorax ochreous white slightly tinged with brown; sides of palpi and frons blackish; patagia with some black scales near upper edge; abdomen ochreous white irrorated with fuscous. Fore wing pale ochreous irrorated with fuscous; the antemedial line indistinct, erect, dentate, with dark points at the veins; a slight black point in lower angle of cell and some fuscous suffusion beyond the angle; postmedial line crenulate and produced to black points on the veins, bent outwards below costa, then oblique and somewhat incurved at discal and submedian folds; an oblique dark shade from termen below apex with a flesh-coloured tinge before and below it; a terminal series of black points. Hind wing ochreous white suffused with fuscous except on costal area; a terminal series of black points; cilia ochreous white. Underside ochreous white irrorated with fuscous; fore wing with fuscous suffusion in and below cell, a postmedial line slightly angled outwards below costa, then oblique, a terminal series of points; hind wing with black discoidal spot with streak before it on median nervure showing

through to upperside, traces of a postmedial line with short black streaks on the veins and a terminal series of points.

Hab. Sikhim; Assam, Khásis, 1 ♂. *Exp.* 38–44 millim.

1958. **Cirphis metaphæa**, n. sp. (Plate XCIII. fig. 32.)

♂. Head and thorax pale ochreous; some black scales on upper edge of tegulæ and patagia; abdomen fuscous, with ochreous segmental lines, anal tuft, and ventral surface. Fore wing pale ochreous slightly tinged with rufous and irrorated with fuscous on terminal area; antemedial line represented by a slight speck in submedian fold; a slight point in lower angle of cell; postmedial line indistinct, crenulate and produced to dark points on the veins; oblique below vein 4, and incurved at discal and submedian folds; an oblique shade from termen below apex; a terminal series of black points. Hind wing dark fuscous brown; cilia ochreous, with a brownish line through them. Underside of fore wing suffused with fuscous except on marginal areas, a small dark spot on costa beyond middle; hind wing ochreous white irrorated with fuscous, the area below the cell suffused with fuscous to near termen, a discoidal lunule with streak before it on median nervure, traces of a postmedial line, a terminal series of points.

Hab. Madras, Palni Hills (*W. H. Campbell*), 1 ♂ type. *Exp.* 42 millim.

1959. **Cirphis placida.**

Mythimna placida, Butl. A. M. N. H. (5) i. p. 79 (1878); id. Ill. Het. B. M. ii. p. 21, pl. 28. f. 5.

Head and thorax pale ochreous; palpi blackish; patagia with some black scales near upper edge, thorax with a slight rufous tinge on dorsum; abdomen ochreous dorsally tinged with fuscous. Fore wing pale ochreous irrorated with black; the antemedial line represented by fuscous spots on the veins; a black point in lower angle of cell and a small patch of fuscous suffusion beyond the angle, the orbicular and reniform sometimes represented by slight pale marks, the latter figure-of-8-shaped; postmedial line hardly traceable, dentate and produced to a series of black points on the veins, bent outwards below costa, slightly incurved in discal fold, oblique below vein 4; a slight oblique shade from termen below apex; a terminal series of black points. Hind wing fuscous black, the cilia ochreous white. Underside of fore wing fuscous except costal and terminal areas, a postmedial fuscous bar on costal area; hind wing pale ochreous irrorated with black, a small discoidal spot, traces of a dentate postmedial line with slight streaks at the veins, and a terminal series of points.

Hab. Japan, Yokohama (*Pryer, Jonas, Manley*), 6 ♂, 1 ♀, type, Tokio (*Maries*), 1 ♂, 1 ♀, Nikko (*Lewis*), 1 ♀; Corea, Gensan (*Ito*), 1 ♂, 1 ♀; W. China, Chang-Yang (*Pratt*), 1 ♂, 2 ♀, Omei-shan, 1 ♀, Ta-chien-lu (*Pratt*), 1 ♂, Ni-tou, 1 ♂. *Exp.* 46–50 millim.

1960. **Cirphis hypophæa**, n. sp. (Plate XCIV. fig. 14.)

♂. Head, thorax, and abdomen grey tinged with pale red-brown; palpi tinged with black at sides; frons with lateral black bars; tegulæ with medial black line; patagia with a few black scales near upper edge; fore femora black above; legs and ventral surface of abdomen slightly irrorated with black. Fore wing greyish slightly tinged with rufous and irrorated with black; subbasal line represented by a black point on costa, antemedial line by a series of black points oblique from costa to submedian fold, then bent inwards; extremity of median nervure and lower discocellular whitish, with a black point in lower angle of cell and a more or less developed black mark beyond the angle; a postmedial series of black points bent outwards below costa, incurved at discal fold, and oblique below vein 4; a terminal series of black points. Hind wing fuscous, paler towards costa; some black points on termen; cilia ochreous white. Underside of fore wing suffused with black except marginal areas; hind wing whitish irrorated with black, a discoidal spot, sinuous punctiform postmedial line, and terminal series of points.

Hab. Ceylon, Maskeliya (*J. Pole*), 2 ♂ type. *Exp.* 34 millim.

1961. **Cirphis rubrisecta**, n. sp. (Plate XCIV. fig. 15.)

♂. Head and thorax ochreous tinged with rufous; palpi tinged with fuscous at sides; patagia with some black scales on upper edge; abdomen ochreous dorsally tinged with fuscous. Fore wing ochreous sparsely irrorated with black, the inner half tinged with pale purplish brown; a rufous streak on median nervure; a black point in lower angle of cell; faint traces of two postmedial series of points on the veins, oblique below vein 4; an oblique rufous streak from termen below apex; some black points on termen. Hind wing fuscous, the cilia ochreous white. Underside ochreous; fore wing with the cell and area below it and beyond lower angle suffused with fuscous; hind wing irrorated with fuscous, slight fuscous streaks beyond lower angle of cell, some points on termen.

Hab. Bhután (*Dudgeon*), 1 ♂ type. *Exp.* 40 millim.

*1962. **Cirphis brantsi.**

Leucania brantsii, Snell. Tijd. v. Ent. xv. p. 48, pl. 4. f. 7 (1872).

♂. Head, thorax, and abdomen ochreous with a rufous tinge. Fore wing ochreous tinged with rufous and with slight fuscous irroration; a slight dentate antemedial line angled inwards to more prominent points on median nervure and vein 1; a black point in end of cell and red-brown patch beyond it, traces of a medial line from lower angle of cell to inner margin; a postmedial series of black points oblique from vein 4 to inner margin and a terminal series. Hind wing white, the terminal area tinged with ochreous; a terminal series of dark striæ.

Hab. W. Africa, Lr. Guinea. *Exp.* 30 millim. This species is unknown to me.

1963. Cirphis inconspicua. (Plate XCIV. fig. 16.)

Leucania inconspicua, Herr.-Schäff. Corresp.-Blatt zool.-min. Ver. Regensb. 1868, p. 148.
Leucania extincta, Druce, Biol. Centr.-Am., Het. i. p. 261 (part.), nec Guen.
Leucania solita, Druce, Biol. Centr.-Am., Het. i. p. 262 (part.), nec Wlk.

Head and thorax ochreous; palpi with some dark scales; tegulæ tipped with purplish brown; dorsal crests of thorax and abdomen tipped with brown: abdomen ochreous, dorsally tinged with fuscous except at base and extremity. Fore wing ochreous sparsely irrorated with black scales; a black point in lower angle of cell and a fuscous mark beyond it; traces of a postmedial line dentate and produced to black points on the veins; a terminal series of black points. Hind wing semihyaline white; the underside with the costal area tinged with ochreous and irrorated with a few brown scales, a terminal series of black points from apex to vein 2.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♀; Panama, Chiriqui (*Champion*), 1 ♂, (Godman-Salvin Coll.; Jamaica; Cuba, 1 ♂, 1 ♀; Brazil, Rio Janeiro, 1 ♂, 1 ♀; Paraguay, Sapucay (*Foster*), 1 ♂. *Exp.* 34 millim.

*1964. Cirphis mocoides. (Plate XCIV. fig. 17.)

Leucania mocoides, Dogn. Ann. Soc. Ent. Belg. xli. p. 245 (1897).

♂. Head and thorax clothed with rufous and ochreous hair; abdomen rufous dorsally tinged with fuscous. Fore wing ochreous suffused with fuscous, leaving an ochreous fascia in discal fold from middle of cell to near termen, bent upwards below apex; a narrow blackish streak below the cell to origin of vein 2; a postmedial series of black points in the interspaces, excurved from costa to vein 4, then oblique; a terminal series of black points from below apex to vein 2; the termen grey with a fine terminal black line; cilia ochreous, with a black line through them. Hind wing semihyaline ochreous white, the inner and terminal areas tinged with brown; cilia white; the underside with the costal area slightly irrorated with brown.

Hab. Ecuador, Loja, type † ♂, in Coll. Dognin. *Exp.* 36 millim.

1965. Cirphis falclandica. (Plate XCIV. fig. 18.)

Leucania falklandica, Butl. A. M. N. H. (6) xii. p. 208 (1893).

♂. Head, thorax, and abdomen pale brown mixed with whitish; tegulæ with the basal half whitish, followed by a black line. Fore wing pale brown; subbasal and antemedial black points below costa; a diffused black streak below base of cell; a diffused antemedial black patch above inner margin; a diffused streak in lower end of cell and beyond the cell above vein 4, expanding into a spot in end of cell; terminal half of median nervure and vein 1 and the veins beyond the cell streaked with whitish; a rather ill-defined dentate postmedial line, bent outwards below costa, excurved to vein 4, then oblique; a subterminal series of diffused black spots in

the interspaces except towards costa, the area beyond it rather browner; a terminal series of black points; cilia whitish, with two brown lines through them. Hind wing ochreous white, the veins and terminal area tinged with fuscous.

Hab. Falkland Is. (*W. F. Dale*), 1 ♂ type (*R. Vallentin*), 3 ♂. *Exp.* 36 millim.

1966. Cirphis remota.

Leucania remota, Staud. Hamburg. Magalhaens. iv. p. 71, f. 15 (1899).

♂. Head and basal part of tegulæ grey mixed with dark brown, the latter with black medial line, their tips and patagia ochreous brown; thorax grey; pectus and legs brown and white; abdomen ochreous brown, the dorsal crest and ventral surface white mixed with dark brown. Fore wing ochreous brown, the costal area suffused with purplish grey to beyond middle; the median nervure streaked with grey, expanding between veins 2 and 5, but not extending to terminal area, a patch of grey above middle of vein 1, an oblique shade from apex and some grey on termen; a black streak below base of vein 1; traces of an obliquely curved post-medial series of black points on the veins; a subterminal series of slight brown streaks in the interspaces; cilia brown slightly tinged with white. Hind wing ochreous white, the veins and terminal area suffused with brown; cilia white, with a brown line at base; the underside with the costal and terminal areas irrorated with brown.

Hab. Patagonia, Punta Arenas (*J. J. Walker*), 1 ♀. *Exp.* 40 millim.

1967. Cirphis quadrannulata. (Plate XCIV. fig. 19.)

Mamestra quadrannulata, Morr. Proc. Ac. Nat. Sci. Phil. 1875, p. 430; Smith, Cat. Noct. N. Am. p. 127.

Head black; frons with lateral grey tufts, a grey band between antennæ; thorax brown, blackish in front, many of the scales tipped with grey; pectus and legs reddish brown; abdomen grey-brown with a yellowish tinge, the anal tuft rufous. Fore wing pale yellow-brown; a fuscous tinge along median nervure, extending beyond the cell to costa and submedian fold; a black streak in base of submedian fold, ending at the claviform, which is small and defined by white and black scales; orbicular and reniform very small, white incompletely defined by black and with red-brown centres, the former elongate, the latter rounded; subterminal line represented by small indistinct dentate black and white marks above and below vein 5; some small blackish lunules on termen. Hind wing yellowish white, the costal and terminal areas tinged with brown; the underside with the costal area sparsely irrorated with red-brown.

The specimens from Mexico and Paraguay have the fore wing much more suffused with black.

Hab. U.S.A., Nebraska, Texas, Colorado, 1 ♂; Mexico, Orizaba; Paraguay, Sapucay (*Foster*), 1 ♀. *Exp.* 36 millim.

Genus **BOROLIA.**

	Type.
Borolia, Moore, P. Z. S. 1881, p. 334	*fasciata.*
Eurypsyche, Butl. Trans. Ent. Soc. 1886, p. 392	*levini.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint fringed with hair, the third short, porrect; frons smooth; eyes large, rounded; antennæ of male ciliated; thorax clothed with scales and hair and without crests; tibiæ moderately fringed with hair; abdomen clothed with rough hair at base but without crests. Fore wing with the apex somewhat acute, the termen obliquely curved; veins 3 and 5 from near angle of cell; vein 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base.

Sect. 1. (*Eurypsyche*). Antennæ of male with very long bristles and fascicles of cilia.

1968. **Borolia levini.**

Leucania lewinii, Butl. Trans. Ent. Soc. 1886, p. 390.
Eurypsyche similis, Butl. Trans. Ent. Soc. 1886, p. 392, pl. ix. f. 6.
Meliana xylogramma, Meyr. Trans. Ent. Soc. 1897, p. 367.

♂. Head and thorax white slightly tinged with purplish pink and irrorated with a few black scales; tegulæ with traces of two or three lines; sides of palpi and frons brownish; legs with dark streaks; abdomen white with a pinkish tinge. Fore wing white tinged with pinkish and sparsely irrorated with black scales on costal and inner areas; the median nervure and vein 4 streaked with white, also the other veins slightly on terminal area; a yellow-brown fascia below median nervure and another above it from

Fig. 160.—*Borolia levini*, ♂. ½.

before middle to just beyond end of cell; postmedial black points on veins 5, 3, 2, 1, sometimes almost obsolete; the costa towards apex and inner margin towards tornus slightly tinged with yellow-brown; a terminal series of black points; cilia brownish. Hind wing white, almost entirely tinged with pale brown.

♀. Abdomen and hind wing much whiter, the latter with the terminal area only tinged with pale brown.

Hab. Queensland, Gayndah, 1 ♂ type *similis*, 1 ♀ type, Brisbane (*Turner*), 1 ♂, 1 ♀; New South Wales (*Raynor*), 1 ♂. *Exp.* 28–30 millim.

Sect. II. Antennæ of male minutely ciliated.

A. Palpi with the 3rd joint rather long and porrect.
  a. Fore wing with the white streak on median nervure hooked on discocellulars.
    a^1. Fore wing ochreous suffused in part with rufous... *interciliata.*
    b^1. Fore wing grey suffused with purple-brown ..... *apparata.*

b. Fore wing with the white streak on median nervure not hooked on discocellulars.
a^1. Fore wing with dark streaks in the interspaces of terminal area.
a^2. Fore wing with black streak below base of cell . *amens*.
b^2. Fore wing without black streak below base of cell.
a^3. Fore wing without olive-brown shade in cell . *rhabdophora*.
b^3. Fore wing with olive-brown shade in cell and thence obliquely to apex ..... *leucogramma*.
b^1. Fore wing without dark streaks in the interspaces of terminal area ..... *albivitta*.

1969. Borolia interciliata. (Plate XCIV. fig. 20.)

Leucania interciliata, Hmpsn. Ann. S. Afr. Mus. ii. p. 272 (1902)

♀. Head and thorax pale ochreous brown; palpi tinged with fuscous at sides; frons with black bar: patagia on outer side and thoracic crests grey and fuscous; abdomen ochreous dorsally tinged with fuscous. Fore wing ochreous; some rufous suffusion in and just below cell and more or less on terminal area; the costal area slightly irrorated with black; the inner area tinged with grey or rufous; a black streak below base of cell and an oblique streak above inner margin before middle; a short white streak on end of median nervure, hooked on discocellulars; the veins of terminal area whitish defined by fine rufous streaks, the interspaces streaked with rufous and with black above veins 5, 4, and above and below submedian fold, some grey on each side of vein 5 and towards tornus; a terminal series of black points; cilia fuscous intersected with white. Hind wing ochreous white, the veins and terminal area tinged with brown; the underside sparsely irrorated with black; some black points on termen from apex to vein 2.

Hab. Natal, Estcourt (*Hutchinson*), 1 ♀ type; Basutoland, Maseru (*Crawshay*), 1 ♀. *Exp.* 40 millim.

1970. Borolia apparata.

Leucania apparata, Wllgrn. Öfv. Vet.-Akad. Förh. 1875, p. 105.

Head and thorax pale brown mixed with grey and fuscous: palpi blackish at sides; tegulæ with three blackish lines; patagia with blackish streaks on outer and upper edges; tibiæ streaked with black; abdomen grey tinged with fuscous. Fore wing grey tinged

Fig. 161.—*Borolia apparata*, ♂. ½.

with purplish brown and sparsely irrorated with fuscous; a black streak below base of cell and an oblique streak above inner margin before middle; traces of an antemedial line oblique from costa to

submedian fold, then angled inwards on vein 1; a blackish streak in end of cell; a short white streak on end of median nervure, hooked on discocellulars, defined by black and with blackish patch beyond lower angle of cell; the veins of terminal area whitish defined by fine brown streaks, the interspaces with black streaks; an indistinct oblique pale fascia from apex; a terminal series of black points; cilia intersected with white. Hind wing whitish tinged with fuscous, especially on the veins and terminal area; the underside whitish irrorated with fuscous, a slight discoidal spot, postmedial series of short streaks on the veins, and terminal series of points.

Hab. Cape Colony, Transkei (*Miss F. Barrett*), 2 ♂, Kokstad (*Mrs. Pringle*), 1 ♂, 1 ♀, Deelfontein (*Col. Sloggett*), 1 ♂. *Exp.* 32–34 millim.

1971. Borolia amens. (Plate XCIV. fig. 21.)

Leucania amens, Guen. Noct. i. p. 88 (1852).
Leucania plana, Wlk. ix. 102 (1856).

Head and thorax ochreous white tinged with olive-brown; palpi irrorated with black; tegulæ with diffused black medial band; fore coxæ blackish on inner side; abdomen ochreous tinged with fuscous. Fore wing ochreous white tinged with olive-brown; the veins whitish defined by slight brown streaks, the interspaces of terminal half also slightly streaked with brown; a black streak below base of cell, and an oblique streak above inner margin before middle; the median nervure with prominent white streak expanding towards extremity and defined by black above and below; a short black streak above base of vein 4; subterminal black streaks above veins 5, 4, 3, and 1; the terminal area rather browner at apex, middle, and tornus. Hind wing whitish, the terminal half more or less suffused with fuscous, in female often wholly suffused; the underside whitish irrorated with fuscous, a small discoidal spot and terminal series of black points.

Hab. Basutoland, Maseru (*Crawshay*), 1 ♂, 2 ♀; Cape Colony (*Dr. A. Smith*), 1 ♂, 1 ♀, type *plana*. *Exp.* 34 millim. Type † in Mus. Paris.

1972. Borolia rhabdophora. (Plate XCIV. fig. 22.)

Leucania rhabdophora, Hmpsn. Ann. S. Afr. Mus. ii. p. 273 (1902).

Head and thorax ochreous mixed with black; sides of palpi and frons black; tegulæ black except at base and with two pale lines; patagia with blackish edges; abdomen ochreous, dorsally tinged with fuscous, ventrally irrorated with black. Fore wing ochreous tinged with brown; the veins whitish defined by fine brown streaks and more or less prominently by diffused black scales, the interspaces also streaked with brown, a slight black streak below base of cell and an oblique streak above inner margin before middle; the median nervure with a short white streak on its extremity, thicker towards angle; subbasal line represented by a

black point on costa, the antemedial line by obliquely placed black points on costa and in submedian fold; a postmedial series of black points, bent outwards below costa and oblique below vein 4; a triangular brown shade from termen below apex; a terminal series of black points. Hind wing whitish, the veins and terminal half suffused with fuscous; the underside with the costal and terminal areas irrorated with black, a discoidal spot, postmedial series of streaks on the veins, and terminal series of points.

Hab. Cape Colony, Transkei (*Miss F. Barrett*), 9 ♂, 4 ♀, type. *Exp.* 32 millim.

1973. Borolia leucogramma, n. sp. (Plate XCIV. fig. 23.)

Head and thorax pale reddish brown; 2nd joint of palpi striped fuscous and whitish at sides; tegulæ white except at tips with two brown lines; prothoracic crest fuscous and grey; abdomen ochreous whitish dorsally tinged with fuscous, ventrally irrorated with fuscous. Fore wing whitish tinged with purplish pink and irrorated with black scales; an olive-brown shade through the cell and thence obliquely to apex; the veins white defined by fine brown streaks, the interspaces also streaked with brown; a prominent white streak on terminal half of median nervure; a slight blackish streak below base of cell and an oblique streak above inner margin before middle; subbasal line represented by a black point on costa, the antemedial line by obliquely placed points on costa, below cell, and in submedian fold; a postmedial series of black points on the veins, bent outwards below costa and oblique below vein 4; a terminal series of black points; cilia brown intersected with white. Hind wing whitish, the veins and marginal areas suffused with brown; the underside whitish, the costal and terminal areas irrorated with brown, a small discoidal spot and postmedial series of slight streaks on the veins.

Abdomen of male with tuft of long hair protrusible from lateral stigmata.

Hab. Br. E. Africa, Nawasha Lake (*Betton*), 1 ♂, Eb Urru (*Betton*), 1 ♂, 1 ♀, type, Machakos (*Crawshay*), 1 ♂. *Exp.* 30 millim.

1974. Borolia albivitta.

Leucania albivitta, Hmpsn. Ill. Het. B. M. viii. p. 68, pl. 144. f. 16 (1891); id. Moths Ind. ii. p. 276.

♀. Head and thorax rufous mixed with some grey and dark brown; patagia with dark streak on outer edge; abdomen fuscous, the ventral surface grey tinged with rufous. Fore wing bright rufous, traces of a blackish streak below base of cell; antemedial line obsolescent, slightly sinuous, oblique from costa to submedian fold, where it is angled, then angled inwards on vein 1; orbicular and reniform small, rufous incompletely defined by black, the former rather elongate elliptical, the latter with black point in lower angle of cell with white streak below it on extremity of median nervure; a few black scales beyond lower angle of cell; postmedial line dentate, bent outwards below costa, oblique below

vein 4, and incurved between veins 2 and 1 ; faint traces of a subterminal line arising from termen below apex and angled inwards in discal fold; a terminal series of slight black lunules; cilia mixed with black. Hind wing fuscous brown, the cilia white with a brown line through them ; the underside grey tinged with brown-pink and irrorated with dark brown, a discoidal spot, postmedial series of short streaks on the veins, and terminal series of lunules.

Hab. Madras, Nilgiris (*Hampson*), 1 ♀ type. *Exp.* 32 millim.

B. (*Borolia*). Palpi with the 3rd joint short.
  a. Fore wing with white streak on median nervure.
    a^1. Fore wing with black streak below base of cell.
      a^2. Fore wing with distinct brown fascia above and below median nervure.
        a^3. Fore wing with the white streak on median nervure hooked on discocellulars ..... *melanoides.*
        b^3. Fore wing with the white streak on median nervure not hooked on discocellulars.
          a^4. Fore wing with black point in lower angle of cell ..... *tacuna.*
          b^4. Fore wing without black point in lower angle of cell ..... *rubrescens.*
      b^2. Fore wing without brown fascia above and below median nervure.
        a^3. Fore wing with the ground-colour ochreous ... *operosa.*
        b^3. Fore wing with the ground-colour grey.
          a^4. Thorax pale yellow ..... *citrinotata.*
          b^4. Thorax greyish with dark irroration.
            a^5 Fore wing with the white streak on median nervure hooked on discocellulars. *melanostrota.*
            b^5. Fore wing with the white streak on median nervure not hooked on discocellulars ..... *percussa.*
    b^1. Fore wing without black streak below base of cell.
      a^2. Fore wing with dark streaks in the interspaces of terminal area.
        a^3. Fore wing with silvery-white fascia on median nervure..... *cruegeri.*
        b^3. Fore wing with slight white streak on median nervure.
          a^4. Hind wing tinged with fuscous except costal area.
            a^5. Fore wing with black point in lower angle of cell ..... *stellata.*
            b^5. Fore wing without black point in lower angle of cell..... *radiata.*
          b^4. Hind wing white, the veins and terminal area usually tinged with fuscous.
            a^5. Fore wing without black point in lower angle of cell.
              a^6. Fore wing with antemedial black point on vein 1 ..... *aspersa.*
              b^6. Fore wing without antemedial black point on vein 1.
                a^7. Fore wing irrorated with black ..... *linita.*
                b^7. Fore wing not irrorated with black ... *venalba.*
            b^5. Fore wing with black point in lower angle of cell.
              a^6. Fore wing with rufous tinge in and beyond end of cell ..... *torrentium.*

b^6. Fore wing without rufous tinge in and beyond end of cell.
a^7. Fore wing with prominent white streak on vein 4 ..... *tincta.*
b^7. Fore wing with the white streak on vein 4 not prominent.
a^8. Fore wing without fuscous fascia along median nervure.
a^9. Fore wing with triangular dark shade from termen below apex.
a^{10}. Fore wing not irrorated with fuscous ..... *incana.*
b^{10}. Fore wing irrorated with fuscous. *byssina.*
b^9. Fore wing with oblique fuscous fascia from apex ..... *acrapex.*
b^8. Fore wing with slight fuscous fascia along median nervure.
a^9. Fore wing without fine white line at base of cilia ..... *steniptera.*
b^9. Fore wing with fine white line at base of cilia ..... *sarcostriga.*
b^2. Fore wing without dark streaks in interspaces of terminal area.
a^3. Fore wing with slight fuscous fascia along median nervure.
a^4. Fore wing ochreous irrorated with black.
a^5. Fore wing with the veins not defined by dark streaks ..... *nigrisparsa.*
b^5. Fore wing with the veins defined by dark streaks ..... *extincta.*
b^4. Fore wing pink not irrorated with black ... *rhodoptera.*
b^3. Fore wing without fuscous fascia along median nervure..... *flabilis.*
b. Fore wing with white point at lower angle of cell.
a^1. Hind wing white ..... *leucostigma.*
b^1. Hind wing fuscous ..... *phæochroa.*
c. Fore wing without white streak or point on median nervure.
a^1. Hind wing wholly suffused with fuscous.
a^2. Fore wing with black streak below base of cell... *fasciata.*
b^2. Fore wing without black streak below base of cell.
a^3. Fore wing with black streak above extremity of median nervure ..... *ferrilinea.*
b^3. Fore wing without black streak above extremity of median nervure ..... *diopis.*
b^1. Hind wing not wholly suffused with fuscous.
a^2. Fore wing with fuscous fascia along median nervure.
a^3. Fore wing with fuscous fascia along inner margin ..... *persecta.*
b^3. Fore wing without fuscous fascia along inner margin.
a^4. Fore wing grey-brown ..... *melanopasta.*
b^4. Fore wing ochreous ..... *micropis.*
b^2. Fore wing without fuscous fascia along median nervure.
a^3. Fore wing with small fuscous patch beyond lower angle of cell ..... *cupreata.*
b^3. Fore wing without small fuscous patch beyond lower angle of cell.
a^4. Fore wing with ante- and postmedial lines . *bilineata.*
b^4. Fore wing without antemedial line and with postmedial series of points..... *sesamiodes.*

1975. Borolia melianoides. (Plate XCIV. fig. 24.)

Leucania melianoides, Möschl. Verh. z.-b. Wien, xxxiii. p. 291, pl. xvi. f. 4 (1884).

Head and thorax ochreous white, slightly tinged with rufous and irrorated with a few dark scales; tegulæ with two fine dark lines; abdomen ochreous dorsally tinged with brown. Fore wing ochreous sparsely irrorated with black; a blackish streak below base of cell and a slight oblique streak above inner margin before middle; a rufous streak in and beyond cell; the median nervure streaked with white except towards base, slightly defined by black and hooked on discocellulars, placed on a diffused fuscous fascia extending to termen, on which it expands somewhat towards apex; the veins on terminal area pale defined by fine dark streaks, the interspaces also with dark streaks; the postmedial line often represented by a curved series of black points; a terminal series of black points; cilia sometimes intersected with white. Hind wing white, the terminal area usually more or less tinged with brown; the underside with the costal and terminal areas irrorated with brown, a terminal series of black points.

Ab. 1. Fore wing with the fuscous median fascia much darker, the inner area suffused with fuscous, the hind wing almost wholly tinged with fuscous.

Hab. Abyssinia, Zegi Tsana (*Degen*), 1 ♀; Br. E. Africa, Eb Urru (*Betton*), 4 ♂, Machakos (*Crawshay*), 2 ♂, 1 ♀, Nairowa (*Betton*), 1 ♀; Mashonaland (*Dobbie*), 3 ♀; Natal, Estcourt (*Hutchinson*), 1 ♀; Cape Colony, Transkei (*Miss F. Barrett*), 7 ♂, 3 ♀, Annshaw (*Miss F. Barrett*), 3 ♀; Madagascar, Betsileo (*Cowan*), 1 ♂. *Exp.* 34–36 millim.

1976. Borolia taçuna.

Leucania tacuna, Feld. Reis. Nov. pl. 110. f. 22 (1874).
Leucania substituta, Wllgrn. Œfv. Vet.-Akad. Förh. 1875, p. 105.

Head and thorax ochreous tinged with reddish brown; tegulæ pale, with two or three dark lines; palpi, frons, and legs tinged with fuscous; abdomen ochreous white slightly tinged with rufous. Fore wing ochreous, tinged with rufous and sparsely irrorated with black; a black streak below base of cell and another in lower extremity of cell from before middle, ending in a prominent black point; median nervure and vein 3 streaked with whitish; a rufous fascia below the cell expanding triangularly beyond the cell to termen and with a curved diffused black streak on its upper edge; costal area tinged with rufous leaving the veins paler; traces of a curved double postmedial series of dark points on the veins; a terminal series of black points. Hind wing white, the costal and terminal areas tinged with ochreous towards apex; some dark points on termen.

Ab. 1. The streak and point in lower angle of cell reduced to two points.

Hab. Br. E. Africa, Athi-ya-Mawe (*Betton*), 1 ♀, Eb Urru (*Betton*), 1 ♂, Gwelil (*Betton*), 2 ♂, Nairowa (*Betton*), 1 ♂, Nairobi (*Betton*), 1 ♂; Mashonaland (*Dobbie*), 1 ♂; Transvaal; Natal, Estcourt (*Hutchinson*), 4 ♂, 7 ♀, Weenen, 1 ♂; Cape Colony, Transkei (*Miss F. Barrett*), 4 ♂, 3 ♀. *Exp.* 32–38 millim.

1977. **Borolia rubrescens**, n. sp. (Plate XCIV. fig. 25.)

Head and thorax pale rufous; antennæ whitish; tegulæ grey with dark medial line: abdomen ochreous, dorsally tinged with brown, ventrally irrorated with black. Fore wing ochreous suffused with bright rufous: the costal area violaceous grey irrorated with black; a black streak below base of cell to origin of vein 2; a black streak above inner margin from before middle to near termen, diffused outwardly; median nervure white defined by black above and below; the veins of terminal area whitish defined by slight brown streaks, veins 3, 4, 5 more prominently white; the interspaces of terminal area streaked with black. Hind wing white, the terminal area tinged with brown, especially in female; the underside with the costal area tinged with brown and irrorated with black; some black points on termen from apex to vein 2.

Hab. Natal, Estcourt (*Hutchinson*), 1 ♂, 1 ♀, type. *Exp.* 38 millim.

1978. **Borolia operosa.** (Plate XCIV. fig. 26.)

Leucania operosa, Saalm. Lep. Madag. p. 259 (1891).

♂. Head and thorax brownish ochreous; tegulæ with medial black line; abdomen brownish ochreous, the ventral surface irrorated with black. Fore wing ochreous, sparsely irrorated with black; the veins of terminal half defined by fine brown streaks, the interspaces also streaked with brown; a black streak below base of cell; the median nervure and vein 4 white, the former with distinct rufous shade below it; a black point in lower angle of cell; a slight wedge-shaped brown shade from termen below apex to lower angle of cell; traces of a postmedial series of black points bent outwards below costa and oblique below vein 4; a terminal series of black points. Hind wing semihyaline white, the veins towards termen and termen tinged with brown; a terminal series of black points; the underside with the costal area slightly irrorated with black; a postmedial series of slight black streaks on the veins.

Hab. Madagascar, Betsileo (*Cowan*), 1 ♂. *Exp.* 34 millim.

1979. **Borolia citrinotata**, n. sp. (Plate XCIV. fig. 27.)

♂. Head and tegulæ grey-white mixed with fuscous; tegulæ with two black lines; thorax pale yellow; abdomen white tinged with ochreous at extremity. Fore wing pale ochreous, with a slight flesh tinge, especially on costal area, and sparsely irrorated

with black; the veins whitish defined by fine pale brown-pink streaks, the interspaces of terminal area also streaked with brown-pink; a sinuous black streak below base of cell to origin of vein 2; a black point in lower angle of cell; a slight triangular dark shade from termen below apex. Hind wing pure white; the underside with the costal area slightly irrorated with brown and some black points on termen from apex to vein 2.

Hab. Br. E. Africa, Athi-ya-Mawe (*Betton*), 1 ♂ type. *Exp.* 30 millim.

1980. **Borolia melanostrota**, n. sp. (Plate XCIV. fig. 28.)

Head and thorax whitish, with a slight violaceous tinge and mixed with fuscous; tegulæ with three dark lines; abdomen ochreous white, the ventral surface irrorated with black. Fore wing white with a slight violaceous tinge and rather thickly irrorated with black; the veins whitish slightly defined by fine brown streaks, the interspaces of terminal half also slightly streaked with brown; a sinuous black streak below base of cell to origin of vein 2; median nervure defined by slight fuscous suffusion above and below, the white on it developed into a slight hook at lower angle, in which there is a black point; a wedge-shaped dark shade from termen below apex to lower angle of cell; traces of an antemedial line on inner area, angled outwards in submedian fold and above inner margin and inwards on vein 1; a postmedial series of black points conjoined by traces of a dentate line, bent outwards below costa and oblique below vein 4; a terminal series of black points. Hind wing pure white; the underside with the costal area slightly irrorated with brown, some black points on termen from apex to vein 2.

Hab. Zululand, Lr. Tugela (*Reynolds*), 1 ♂ type; Natal, Weenen, 1 ♀; Cape Colony, Transkei (*Miss F. Barrett*), 1 ♀. *Exp.* 32–36 millim.

1981. **Borolia percussa.**

Leucania percussa, Butl. P. Z. S. 1880, p. 674.
Leucania howra, Moore, P. Z. S. 1881, p. 357, pl. 37. f. 16; Hmpsn. Moths Ind. ii. p. 271.
Leucania basilinea, Swinh. Trans. Ent. Soc. 1890, p. 220, pl. vii. f. 6.

Head and thorax whitish mixed with pale brownish ochreous; palpi blackish at sides; tegulæ with two slight dark lines; legs streaked with blackish; abdomen white tinged with brownish. Fore wing pale ochreous tinged with brown and sparsely irrorated with black; the veins whitish defined by fine brown streaks, the interspaces of terminal half also streaked with brown; the median nervure defined by fuscous above and below; a prominent black streak in submedian fold to origin of vein 2; a black point

in lower angle of cell: traces of a postmedial series of black points, bent outwards below costa and oblique below vein 4; a terminal series of black points. Hind wing white; the underside with the costal area irrorated with brown, a terminal series of black points from apex to vein 2.

Hab. Formosa, Takow (*Hobson*), 1 ♂, 1 ♀, type; Sikhim, 1800′ (*Dudgeon*), 1 ♀; Bengal, Calcutta; Burma, Bhámo, 1 ♂ type *basilinea*; Java. *Exp.* 32–34 millim.

1982. Borolia cruegeri. (Plate XCIV. fig. 29.)

Leucania cruegeri, Butl. Trans. Ent. Soc. 1886, p. 391.
Leucania præclara, Swinh. A.M.N.H. (7) ix. p. 422 (1902).

Head and tegulæ white slightly irrorated with fuscous; patagia and thorax ochreous; abdomen white tinged with ochreous. Fore wing ochreous: the costal and inner areas slightly irrorated with fuscous; the costal edge white; a broad white fascia on median nervure slightly defined by brown below; veins 2, 3, 4, 5, and the extremities of veins 6, 7 streaked with white, vein 4 most prominently; the interspaces of terminal area with slight brown streaks; an oblique dark shade from termen below apex; a terminal series of black points. Hind wing semihyaline white, the terminal area tinged with brown.

Hab. Queensland, Gayndah, 1 ♂ type, Brisbane (*Turner*), 1 ♂; W. Australia, Roebuck B. (*J. J. Walker*), 1 ♂, Cossack (*J. J. Walker*), 3 ♂, 2 ♀, Sherlock R. (*Clements*), 2 ♂, 7 ♀, Racbourne (*Lyell*), 1 ♂. *Exp.* 32 millim.

1983. Borolia stellata, n. sp. (Plate XCIV. fig. 30.)

♂. Head and thorax ochreous; tegulæ with three dark lines, the upper one most distinct; patagia with some black scales near upper edge; palpi at sides and tarsi brownish; abdomen ochreous dorsally tinged with brown. Fore wing ochreous; the veins defined by fine brown streaks, the interspaces also streaked with brown; the median nervure defined below by a reddish-brown shade met at lower angle of cell by a slight oblique shade from apex; an oblique pale fascia from apex defined on outer side by a slight dark shade from termen below apex; subbasal line represented by a black point on costa, the antemedial line by obliquely placed black points on costa and in submedian fold; a black point in lower angle of cell; postmedial black points on veins 5 and 2; a terminal series of black points. Hind wing ochreous white, suffused with fuscous brown except costal area; cilia ochreous; the underside whitish irrorated with fuscous, a small discoidal spot, postmedial series of points on the veins and a terminal series.

Hab. Japan, Yokohama (*Pryer*), 1 ♂ type. *Exp.* 34 millim.

1984. Borolia radiata.

Leucania radiata, Brem. Lep. Ost-Sib. p. 48, pl. v. f. 8 (1864); Oberth. Ét. Ent. v. p. 70, pl. 3. f. 5; Staud. Cat. Lep. pal. p. 193.

♂. Head and thorax ochreous; tegulæ with three dark lines, the upper one most distinct; patagia with some black scales near upper edge; palpi and tarsi brownish; abdomen ochreous dorsally tinged with brown. Fore wing ochreous; the veins defined by fine rufous streaks, the interspaces also streaked with rufous; the median nervure slightly defined below by rufous suffusion met at lower angle of cell by a slight shade from apex; a slight triangular rufous shade from termen below apex defining on outer side an oblique pale fascia; antemedial line represented by obliquely placed black points on costa, below cell, and in submedian fold; a postmedial series of black points bent outwards below costa and oblique below vein 4. Hind wing yellowish white, the inner area and the area between end of cell and termen suffused with fuscous; the underside with the costal and terminal areas irrorated with a few black scales, a small discoidal lunule, postmedial series of short streaks on the veins, and some points on termen.

Hab. S.E. Siberia, Ussuri; Japan, Oiwake (*Pryer*), 2 ♀. *Exp.* 36 millim.

1985. Borolia aspersa.

Leucania aspersa, Snell. Tijd. v. Ent. 1880, p. 42, pl. 4. f. 1.
Leucania homopterana, Swinh. Trans. Ent. Soc. 1890, p. 219, pl. vii. f. 12; Hmpsn. Moths Ind. ii. p. 272.

♂. Head and thorax ochreous tinged with rufous; frons with lateral black bars; tegulæ with three dark lines; abdomen ochreous white slightly tinged with fuscous. Fore wing ochreous, the cell, inner and terminal areas tinged with rufous; the veins whitish, defined by fine rufous streaks, the interspaces also streaked with rufous; the white streak on median nervure more prominent, expanding into a slight spot at extremity and with a small fuscous patch beyond it; obliquely placed antemedial black points below origin of vein 2 and on vein 1; a postmedial series of black points bent outwards below costa and oblique below vein 4; a terminal series of points. Hind wing ochreous white, the veins and termen tinged with brown; the underside with the costal and terminal areas irrorated with brown, a terminal series of black points from apex to vein 2.

Hab. Burma, Rangoon, 1 ♂ type *homopterana*; Celebes, Makassar, 1 ♂. *Exp.* 30 millim. Type † in Coll. Snellen.

1986. Borolia linita. (Plate XCIV. fig. 31.)

Leucania linita, Guen. Noct. i. p. 81 (1852); Smith, Cat. Noct. N. Am. p. 187.
Leucania scirpicola, Guen. Noct. i. p. 84 (1852).
Heliophila amygdalina, Harv. Can. Ent. x. p. 57 (1878).

Head and thorax ochreous white, tinged with brownish and

slightly irrorated with black; tegulæ with traces of three brown lines; abdomen ochreous white tinged with brown. Fore wing ochreous white irrorated with black; the veins white, clearly defined by brown streaks; the terminal area with fine brown streaks in the interspaces; a black point usually present below origin of vein 2; slight black marks in and beyond lower angle of cell usually present; a postmedial series of black points bent outwards below costa and oblique below vein 4; a slight oblique shade from below apex; a terminal series of black points usually present. Hind wing white, the terminal area more or less tinged with brownish ochreous; the underside with terminal series of black points on the costal half.

The type is an aberration with the black points of fore wing obsolete.

Ab. 1. *scirpicola*. Head, thorax, and fore wing much more suffused with rufous.

Hab. U.S.A., Maine, Orono, 1 ♂ type *amygdalina*, E. States, Florida, St. John's Bluff (*Doubleday*), 3 ♂, 6 ♀, type and type *scirpicola*. *Exp.* 38–40 millim.

1987. **Borolia venalba.** (Plate XCIV. fig. 32.)

Leucania venalba, Moore, P. Z. S. 1867, p. 48; Hmpsn. Moths Ind. ii. p. 279.
Leucania linearis, Lucas, P. Soc. Queensl. viii. p. 85 (1894).

Head and thorax ochreous tinged with rufous; tegulæ greyer, with two dark lines and brown tips; abdomen ochreous white. Fore wing ochreous; the veins white defined by bright red or red-brown streaks, the interspaces also streaked with red-brown; the antemedial line represented by a black point below the cell; an oblique pale fascia from apex defined by a rufous or fuscous shade above, and below by a triangular shade from termen below apex; a terminal series of black points often present. Hind wing hyaline white, the apical half of termen tinged with ochreous; the underside with the costal area tinged with brown.

Hab. China; Sikhim (*Russell*, *Dudgeon*), 3 ♂, 1 ♀, type; Bengal, Barrackpur, 1 ♂; Ceylon (*Mackwood*), 1 ♀; Singapore (*Ridley*), 2 ♀; Queensland, Brisbane (*Turner*), 1 ♂, 2 ♀. *Exp.* 30–36 millim.

1988. **Borolia torrentium.** (Plate XCV. fig. 1.)

Leucania torrentium, Guen. Noct. i. p. 88 (1852).
Leucania infima, Wllgrn. Öfv. Vet.-Akad. Förh. 1875, p. 106.
Leucania pinna, Saalm. Lep. Madag. p. 253 (1891).

Head and thorax ochreous tinged with rufous; tegulæ with two more or less distinct dark lines; patagia with some black scales near upper edge; abdomen ochreous, dorsally tinged with fuscous. Fore wing pale brownish ochreous; the costal and inner areas slightly irrorated with black; the veins whitish defined by slight brown

streaks, the interspaces of terminal half streaked with brown; a slight black streak below base of cell usually present, and a slight oblique streak above inner margin before middle; some rufous in and beyond end of cell; a black point in lower angle, and often a small wedge-shaped black patch beyond the angle; the antemedial line often represented by a black point in submedian fold; the postmedial line usually represented by black points on vein 2 and inner margin, sometimes with traces of a crenulate line bent outwards below costa and oblique below vein 4; a slight oblique pale fascia from apex defined by brown shades above and below; a terminal series of black points; cilia brown intersected with whitish. Hind wing white, the veins and termen tinged with brown, especially in female; the underside with the costal area tinged with ochreous and irrorated with fuscous, some slight postmedial black streaks on the veins and some terminal points from apex to vein 2.

Hab. Br. E. Africa, Sabaki Valley (*Gregory*), 1 ♀, Eb Urru (*Betton*), 2 ♀, Kikuyu (*Betton*, *Crawshay*), 2 ♀, Machakos (*Crawshay*), 2 ♂, Munisu (*Ld. Delamere*), 1 ♂; Mashonaland, Salisbury (*Marshall*), 1 ♀; Natal, Estcourt (*Hutchinson*), 1 ♂, 1 ♀, Durban (*Gueinzius*, *Leigh*), 2 ♂, 1 ♀; Basutoland, Maseru (*Crawshay*), 1 ♂, 2 ♀; Cape Colony (*Dr. A. Smith*), 1 ♀, Knysna (*Trimen*), 1 ♂, 4 ♀, Capetown (*Trimen*), 1 ♂, 1 ♀; Madagascar, type † in Mus. Paris; Bourbon. *Exp.* 30–32 millim.

1989. Borolia tincta. (Plate XCV. fig. 2.)

Leucania tincta, Wlk. xv. 1660 (1858).

♀. Head and thorax pale grey tinged with brown; tegulæ with two or three dark lines. Fore wing flesh-colour irrorated with black; the veins whitish defined by fine brown lines, the median nervure and vein 4 with more prominent white streaks; the interspaces of terminal half streaked with fuscous; the antemedial line sometimes represented by black points below cell and on vein 1; a black point in lower angle of cell; a postmedial series of black points on the veins, oblique below vein 4; an oblique pale fascia from apex with a slight triangular dark shade below it; a terminal series of black points; cilia white, with three brown lines through them. Hind wing white, the veins and terminal area tinged with brown; the underside with some dark irroration on costa, traces of a postmedial series of points on the veins and a terminal series.

Hab. Br. E. Africa, Eb Urru (*Betton*), 2 ♀; Natal, Estcourt (*Hutchinson*), 1 ♀, Durban (*Gueinzius*), 1 ♀ type. *Exp.* 34 millim.

1990. Borolia ineana.

Leucania ineana, Snell. Tijd. v. Ent. 1880, p. 43, pl. 4. f. 2.

Head and thorax whitish tinged with pinkish: abdomen ochreous white, with sublateral series of black points. Fore wing flesh-pink, leaving paler fasciæ in discal and submedian folds and above vein 6;

the veins streaked with white and defined by fine, slightly darker streaks, the interspaces of terminal area also with slight dark streaks; a black point in submedian fold below origin of vein 2, a point in lower angle of cell, a curved postmedial series and a terminal series. Hind wing semihyaline white, tinged with ochreous towards termen, on which there is a series of dark points.

Hab. Sikhim (*Dudgeon*), 1 ♀; Celebes, Bonthain, type † ♂ in Coll. Snellen. *Exp.* 32 millim.

1991. Borolia byssina.

Leucania byssina, Swinh. P. Z. S. 1885, p. 442, pl. 40. f. 6; Hmpsn. Moths Ind. ii. p. 272.

♀. Head and thorax ochreous white mixed with pale brown; abdomen ochreous white. Fore wing ochreous white, rather thickly irrorated with black; a black point at base; the antemedial line represented by a black point in submedian fold; a black point in lower angle of cell; a postmedial series of black points bent outwards below costa and oblique below vein 4; a very slight fuscous triangular shade from termen below apex; a terminal series of black points. Hind wing white, the termen very slightly tinged with ochreous.

Ab. 1. Fore wing with slight pale streak on extremity of median nervure, hooked on discocellulars, the postmedial line reduced to points.—Kangra.

Hab. Punjab, Kangra Valley, 4500′ (*Dudgeon*), 1 ♀; Bombay, Mhow (*Swinhoe*), 1 ♀ type. *Exp.* 30 millim.

1992. Borolia acrapex, n. sp. (Plate XCV. fig. 3.)

♀. Head and thorax pale pinkish, the palpi and vertex of head tinged with ochreous; abdomen ochreous whitish. Fore wing pinkish white sparsely irrorated with black scales; the veins defined by fine brown-pink streaks; the cell and interspaces of terminal half also streaked with brown-pink, a black point in lower angle of cell; a postmedial series of black points, oblique below vein 4; a slight oblique dark shade from apex to discocellulars; a terminal series of black points. Hind wing yellowish white; the underside with a few black scales on costal area and some black points on termen.

Hab. Br. E. Africa, Alis (*Betton*), 1 ♀ type. *Exp.* 32 millim.

1993. Borolia steniptera, n. sp. (Plate XCV. fig. 4.)

♀. Head and thorax white, tinged with pinkish and mixed with brown; abdomen ochreous white, the ventral surface irrorated with brown. Fore wing pinkish white irrorated with brown, the veins defined by slight brown streaks; diffused brown streaks on each side of median nervure, and thence obliquely to termen below apex; a black point in lower angle of cell; a postmedial series of black points bent outwards below costa and oblique below vein 4;

the interspaces of terminal area with fine brown streaks ; a terminal series of black points. Hind wing semihyaline white, the veins and termen tinged with ochreous ; the underside with the costal area tinged with ochreous and irrorated with brown.

Hab. Paraguay, Sapucay (*Foster*), 2 ♀ type. *Exp.* 32 millim.

1994. Borolia sarcostriga, n. sp. (Plate XCV. fig. 5.)

Leucania extincta, Druce, Biol. Centr.-Am., Het. i. p. 261 (part.), nec Guen.

♂. Head and thorax pale ochreous mixed with dark brown ; palpi tinged with fuscous at sides ; abdomen ochreous irrorated with brown. Fore wing ochreous, tinged with brown and thickly irrorated with large dark brown scales ; an ill-defined fuscous fascia on median nervure ; the basal part of submedian interspace paler ; an ill-defined ochreous streak tinged with rufous in discal fold, then bent upwards to apex ; two dark brown discoidal points ; faint traces of a postmedial series of dark points on the veins and a terminal series. Hind wing semihyaline white ; a terminal series of black points from apex to vein 2 ; cilia brownish towards apex ; the underside with the costal area tinged with brown and irrorated with brown scales.

Ab. 1. Fore wing paler, with only the lower discoidal point and a short white streak on extremity of median nervure below it.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♂ ; Guatemala, Vera Paz (*Champion*), 1 ♂ ; Panama, Bugaba (*Champion*), 1 ♀, Chiriqui (*Champion*), 1 ♂ type, Godman-Salvin Coll.; Brazil, Petropolis (*Doer*), 1 ♂, Castro Paraña. *Exp.* 36 millim.

1995. Borolia nigrisparsa. (Plate XCV. fig. 6.)

Leucania nigrisparsa, Hmpsn. Ann. S. Afr. Mus. ii. p. 274 (1902).

♀. Head and thorax pale brownish ochreous ; abdomen white slightly tinged with ochreous, the ventral surface irrorated with black. Fore wing ochreous, sparsely irrorated with black ; the median nervure and base of vein 4 streaked with white ; a slight fuscous shade below median nervure ; a black point in lower angle of cell ; a curved postmedial series of slight black points on the veins ; a slight triangular fuscous shade from termen below apex ; a terminal series of black points. Hind wing pure white ; the underside with the costal area irrorated with fuscous.

Hab. Cape Colony, Transkei (*Miss F. Barrett*), 1 ♀ type. *Exp.* 40 millim.

1996. Borolia extincta.

Leucania extincta, Guen. Noct. i. p. 79 (1852) ; Smith, Cat. Noct. N. Am. p. 187.

Heliophila texana, Morr. Proc. Bost. Soc. N. H. xvii. p. 211 (1874).

Heliophila ligata, Grote, Trans. Am. Ent. Soc. v. p. 115 (1875) ; Smith, Cat. Noct. N. Am. p. 187.

Leucania oriza, Schaus, J. N.Y. Ent. Soc. vi. p. 114 (1875); Druce, Biol. Centr.-Am., Het. ii. p. 568.
Leucania oaxacana, Schaus, J. N.Y. Ent. Soc. vi. p. 115 (1898); Druce, Biol. Centr.-Am., Het. ii. p. 568.

Head and thorax ochreous white, tinged with pale purplish pink and slightly irrorated with dark brown; abdomen ochreous white. Fore wing pale ochreous tinged with purplish pink; the median nervure slightly streaked with white, expanding slightly at lower

Fig. 162.—*Borolia extincta*, ♂. ½.

angle of cell, in which there is a black point; a postmedial series of black points on the veins and a prominent terminal series. Hind wing white, the terminal half tinged with pale brown; a series of black points on apical half of termen; the underside with the costal area irrorated with brown.

Ab. 1. *texana*. Hind wing almost wholly white.

Hab. U.S.A., Florida, St. John's Bluff (*Doubleday*), 2 ♂, 1 ♀, type, Texas, 1 ♂, 2 ♀, type *ligata*, Colorado; Mexico, Orizaba, type † *oaxacana* and type ♀ *oriza* in Coll. Schaus. *Exp.* 36 millim.

1997. Borolia rhodoptera, n. sp. (Plate XCV. fig. 7.)

♂. Head ochreous; palpi at sides, lower part of frons, and antennæ pinkish; thorax brownish pink mixed with white; pectus white; legs tinged with pink; abdomen ochreous. Fore wing pink; the costal edge white; the veins white defined by rather deeper pink; a diffused yellowish-white fascia below the cell and a better-defined fascia in discal fold from middle of cell to towards termen and above vein 6 to close to termen; an obliquely curved postmedial series of slight black points and a terminal series; cilia tipped with white except towards tornus. Hind wing pure semi-hyaline white.

Hab. Colombia (*Petersen*), 1 ♂ type. *Exp.* 30 millim.

1998. Borolia flabilis. (Plate XCV. fig. 8.)

Heliophila flabilis, Grote, Can. Ent. xiii. p. 15 (1881); Smith, Cat. Noct. N. Am. p. 189.
Heliophila rimosa, Grote, Can. Ent. xiv. p. 216 (1882); Smith, Cat. Noct. N. Am. p. 189.

♂. Head and thorax white slightly tinged with brown; abdomen ochreous white. Fore wing ochreous white suffused with pale

pinkish brown, leaving white fasciæ in submedian fold from base to beyond middle, in discal fold from near base to near termen, and a short streak above vein 6 before termen; a few scattered black scales; a black point in lower angle of cell and a slight black streak above vein 4; traces of a curved postmedial series of points on the veins; a terminal series of slight points. Hind wing white; the terminal area tinged with pale brown from apex to vein 2; the underside with the costal area tinged with pale brown.

Hab. U.S.A., Maine, Kittery Point, New York, Long Island, 1 ♂ type. *Exp.* 36 millim.

*1999. Borolia leucostigma.

Leucania leucostigma, Snell. Tijd. v. Ent. xx. p. 23, pl. 2. f. 12 (1877).

♂. Head and thorax pale brown-pink: abdomen ochreous white. Fore wing ochreous, suffused and striated with pink and slightly irrorated with fuscous; a small round white spot at lower angle of cell with small fuscous patch beyond it; a curved subterminal series of black points. Hind wing pure white.

Hab. Java, in Coll. de Joannis. *Exp.* 30 millim.

2000. Borolia phæochroa, n. sp. (Plate XCV. fig. 9.)

Head and thorax pale grey-brown mixed with some black; abdomen brown irrorated with black, the anal tuft fulvous in male. Fore wing pale grey-brown with a purplish tinge and thickly irrorated with black; the veins hardly paler; a brown streak along median nervure continued beyond end of cell to join the slight triangular brown shade from termen below apex: a white point at lower angle of cell; antemedial line represented by obliquely placed black points on costa and below cell; a black point in middle of cell; a postmedial series of black points bent outwards below costa and oblique below vein 4, conjoined by an indistinct crenulate line; a terminal series of black points. Hind wing fuscous; cilia with ochreous line at base, then a fuscous line and whitish tips; the underside ochreous white irrorated with black, a black discoidal lunule, postmedial series of slight streaks on the veins, and terminal series of small lunules.

Hab. Natal, Estcourt (*Hutchinson*), 1 ♀ type; Cape Colony, Annshaw (*Miss F. Barrett*), 1 ♂, Kokstad (*Mrs. Pringle*), 1 ♀. *Exp.* 34–38 millim.

2001. Borolia fasciata.

Borolia fasciata, Moore, P. Z. S. 1881 p. 334, pl. 37. f. 12; Hmpsn. Moths Ind. ii. p. 278.
Borolia furcifera, Moore, Lep. Atk. p. 98, pl. 4. f. 16 (1881).

♀. Head and thorax rufous; palpi and frons dark at sides; abdomen rufous. Fore wing pale rufous irrorated with fuscous; a black and rufous streak below base of cell; median nervure and

base of veins 3, 4 streaked with grey : a deeper rufous streak above terminal part of median nervure, continued above vein 4 and expanding towards termen into a triangular patch extending to below apex ; traces of an antemedial line excurved below cell and angled inwards on vein 1 ; orbicular and reniform represented by ill-defined small pale spots ; traces of a highly dentate postmedial line with two series of black points on it, the inner in interspaces, the outer on the veins, oblique below vein 4 ; a terminal series of black points. Hind wing rufous suffused with fuscous ; the underside paler irrorated with brown, a dark discoidal point and sinuous postmedial line with slight dark streaks at the veins.

Ab. 1. Greyer ; fore wing with the markings blacker.—Yatung.

Hab. Sikhim Tibet, Yatung (*Hobson*), 1 ♀ ; Sikhim, 1 ♀ type. *Exp.* 34–38 millim.

2002. Borolia ferrilinea. (Plate XCV. fig. 10.)

Leucania ferrilinea, Leech, Trans. Ent. Soc. 1900, p. 128.

Head, thorax, and abdomen olive grey-brown tinged with rufous ; sides of palpi and frons blackish ; legs tinged with fuscous. Fore wing olive grey-brown more or less irrorated with dark brown ; traces of a dentate antemedial line from cell to inner margin ; the extremity of median nervure with pale streaks ; a rufous and black fascia above end of median nervure continued above vein 4 till met by an obliquely curved dark streak from termen just below apex ; orbicular and reniform represented by ill-defined small pale spots ; traces of a highly dentate postmedial line with two series of black points on it, the inner in interspaces, the outer on the veins ; a terminal series of black points. Hind wing uniform fuscous brown ; the cilia pale brown, with a dark line through them ; the underside pale reddish brown thickly irrorated with fuscous, a discoidal lunule and indistinct sinuous postmedial line with dark streaks on the veins.

Hab. W. China, Pu-tsu-Fang, 1 ♂, 2 ♀, type, Omeishan, 1 ♂, Moupin (*Krickeldorf*), 1 ♂. *Exp.* 34–36 millim.

2003. Borolia diopis, n. sp. (Plate XCV. fig. 11.)

Leucania scirpi, Hmpsn. Nat. Hist. Sokotra, p. 323 (nec Dup.).

♀. Head and thorax ochreous white with a flesh tint ; palpi irrorated with black at sides ; abdomen ochreous, dorsally tinged with fuscous leaving pale segmental lines, the ventral surface irrorated with black. Fore wing pale ochreous tinged with flesh-colour ; a slight fuscous streak on extremity of median nervure and base of vein 4 ; faint traces of an antemedial line oblique from costa to submedian fold, then angled inwards on vein 1 ; traces of small pale orbicular and reniform stigmata ; faint traces of a crenulate postmedial line with black points on veins 6 and 4 ; the terminal

area slightly darker. Hind wing ochreous, uniformly suffused with fuscous; the underside yellowish white, with slightly darker irroration on costal and terminal areas.

Hab. Sokotra, Adho Dimellus, 3500′ (*W. R. O. Grant*), 1 ♀ type. *Exp.* 32 millim.

2004. **Borolia persecta,** n. sp. (Plate XCV. fig. 12.)

Head and thorax reddish brown largely mixed with black; abdomen ochreous whitish tinged with fuscous. Fore wing pale ochreous brown, rather thickly irrorated with fuscous; a greyish and black fascia in and below cell and thence to termen, towards which it expands to below apex; some grey and black suffusion on costal area towards apex defining above an oblique ochreous fascia from apex; a greyish and black fascia on inner area from before middle expanding at termen; a black streak in lower part of cell and a small spot in lower angle; the veins of terminal area defined by slight black streaks, the interspaces also streaked with black; a terminal series of small black spots. Hind wing white, the veins, costal area, and termen tinged with brown; the underside with the costal area tinged with brown and irrorated with fuscous, a terminal series of black points.

Hab. Natal, Estcourt (*Hutchinson*), 2 ♂ type. *Exp.* 34 millim.

2005. **Borolia melanopasta.** (Plate XCV. fig. 13.)

Leucania melanopasta, Turner, P. Linn. Soc. N. S. W. 1902, p. 81.

♂. Head and thorax ochreous with a slight olive tinge; palpi blackish at sides; tegulæ with slight medial line and tipped with black and white scales; patagia with some black scales near edges; abdomen white, irrorated with fuscous towards extremity and on ventral surface. Fore wing ochreous with a slight olive tinge and irrorated with black, an ill-defined black streak below base of cell; median nervure streaked with blackish except at base; three black points in lower part of cell; postmedial line represented by a double series of black points, the inner in the interspaces, the outer on the veins, oblique below vein 4; a terminal series of small black spots. Hind wing ochreous whitish suffused with brown, especially on the veins and terminal half; a dark terminal line; the underside with the costal and terminal areas irrorated with fuscous, a dark discoidal spot and terminal series of black points.

Hab. Queensland, Brisbane (*Turner*), 1 ♂. *Exp.* 34 millim.

2006. **Borolia micropis,** n. sp. (Plate XCV. fig. 14.)

Head, thorax, and abdomen brownish ochreous irrorated with black. Fore wing ochreous, suffused in parts with reddish brown and irrorated with black; a slight dark shade below the cell and thence to an oblique shade from termen below apex; three black points in lower extremity of cell, the one in lower angle with a

semicircular whitish mark below it; an indistinct minutely waved postmedial line, bent outwards below costa and oblique below vein 4, with a series of black points beyond it on the veins; a terminal series of small black lunules; cilia chequered fuscous and ochreous. Hind wing whitish, the terminal area tinged with ochreous; the underside with the costal area irrorated with brown, a terminal series of black points.

Hab. Mashonaland, Salisbury (*Marshall, Dobbie*), 2 ♂, 1 ♀, type. *Exp.* 28 millim.

2007. **Borolia cupreata**, n. sp. (Plate XCV. fig. 15.)

♀. Head and thorax ochreous mixed with fuscous; abdomen ochreous white, dorsally tinged with rufous. Fore wing ochreous, wholly suffused with cupreous red and irrorated with fuscous; the costal edge fuscous; an indistinct blackish antemedial line oblique from costa to submedian fold, where it is angled; a small black patch beyond lower angle of cell with oblique line from it to inner margin; a postmedial series of black points bent outwards below costa and oblique below vein 4; traces of a subterminal fuscous line slightly angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia brown, with a fine pale line at base. Hind wing pale ochreous, the terminal area tinged with fuscous; cilia ochreous at base, whitish at tips; the underside with the costal area tinged with reddish and irrorated with brown, a discoidal point and traces of a curved postmedial line.

Hab. Gazaland, Chirinda Forest (*Marshall*), 1 ♀ type. *Exp.* 38 millim.

2008. **Borolia bilineata**, n. sp. (Plate XCV. fig. 16.)

♀. Head and thorax ochreous white irrorated with fuscous; abdomen whitish irrorated with fuscous. Fore wing whitish suffused with purplish pink; the veins and costal area irrorated with black; subbasal line represented by a black striga from costa; antemedial line curved, slightly waved; orbicular and reniform traceable as small pale spots, the latter with slight white streak below it; postmedial line excurved from costa to vein 4, then incurved; subterminal line indistinct, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing yellowish white; the underside with the costal area irrorated with brown.

Hab. Br. E. Africa, Kikuyu (*Crawshay*), 1 ♀ type. *Exp.* 28 millim.

2009. **Borolia sesamiodes**, n. sp. (Plate XCV. fig. 17.)

♂. Head and thorax pale red-brown slightly irrorated with fuscous; tegulæ sometimes with traces of a dark line; fore legs fuscous in front; abdomen white, tinged with fuscous except towards base, the anal tuft ochreous. Fore wing pale red-brown

slightly irrorated with fuscous; a curved postmedial series of black points and a terminal series; cilia yellowish white, with a diffused fuscous line through them. Hind wing yellowish white, the veins and terminal area tinged with brown; the underside with postmedial series of fuscous points on the veins and terminal series.

♀. Slightly paler.

Hab. Algeria, Hammam-es-Salahin (*Walsingham*), 4 ♂, 2 ♀, type. *Exp.* 38–44 millim.

Larva feeds in *Arundo phragmites* with that of *Sesamia nonagrioides*, the perfect insects being almost identical in appearance.

Genus **MELIANA.**

	Type.
Melia, Curt. Brit. Ent. vi. p. 201 (1829), nec Bilb. Crust. 1820 .	*flammea.*
Meliana, Curt. Brit. Ent. vi. Index (1829)	*flammea.*
Neleucania, Smith, Pr. U.S. Nat. Mus. xxv. p. 203 (1902).....	*niveicosta.*

Proboscis fully developed; palpi obliquely upturned, fringed with hair in front; frons with rounded prominence with corneous plate below it; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair, with scales below it and without crests; tibiæ fringed with very long hair; abdomen without crests. Fore wing with the apex somewhat acute, the termen rather obliquely rounded; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 and 6, 7 shortly stalked; 5 obsolescent from middle of discocellulars; 8 anastomosing with the cell near base.

Sect. I. Antennæ of male bipectinate with short branches.

2010. **Meliana pectinata**, n. sp.

Head and thorax white, tinged with violaceous and mixed with some rufous; tegulæ with slight dark lines at middle and near tips; legs with blackish streaks; abdomen ochreous white, tinged with rufous towards extremity. Fore wing white, tinged with violaceous and usually with rufous and irrorated sparsely with black; a black streak below base of cell and a slight oblique streak

Fig. 163.—*Meliana pectinata*, ♂. ½.

above inner margin before middle; the median nervure and veins of terminal half white defined by fine brown streaks, the interspaces of terminal area also streaked with brown, the white streak on median nervure forming a hook on discocellulars, a black fascia above terminal part of median nervure, continued as

a fuscous wedge-shaped mark to termen, where it expands to below apex, and with some short black streaks from its inner edge, above vein 5 extending almost to cell; a short black fascia in terminal part of submedian fold; a terminal series of black points; cilia brown intersected with white. Hind wing white, sometimes tinged with ochreous; a more or less prominent terminal series of black points; the underside with the costal and terminal areas irrorated with black, a slight discoidal lunule.

Ab. 1. Fore wing with the black markings replaced by pale brown or grey.

Hab. Br. E. Africa, Machakos (*Crawshay*), 4 ♂, 2 ♀, type, Kikuyu (*Crawshay*), 2 ♂, Eb Urru (*Betton*), 7 ♂, 1 ♀, Gwelil (*Betton*), 1 ♂. *Exp.* 24–30 millim.

Sect. II. Antennæ of male ciliated.

A. Tibiæ of male thickly fringed with long hair on both sides.

2011. Meliana rubripennis.

Leucania rubripennis, Grote & Rob. Trans. Am. Ent. Soc. iii. p. 179, pl. 2. f. 77 (1870); Smith, Cat. Noct. N. Am. p. 186.

♂. Head and thorax red-brown; tegulæ white at base, red-brown at tips; abdomen ochreous brown. Fore wing ochreous; a purplish-pink fascia from median nervure and vein 3 to submedian fold from base to termen; a wedge-shaped patch above vein 4

Fig. 164.—*Meliana rubripennis*, ♂. ½.

extending on termen to below apex, and with slight ochreous streak on it above middle of vein 4; costal area tinged with purplish pink towards apex. Hind wing ochreous. Underside tinged with brown.

Hab. U.S.A., Texas, 1 ♂ type. *Exp.* 40 millim.

B. Tibiæ of male fringed with hair on outer side only.

a. (*Meliana*). Abdomen long and slender; fore wing produced and acute at apex.

*a*¹. Fore wing with the veins of costal area streaked with white ..... *flammea*.

*b*¹. Fore wing with the veins of costal area not streaked with white ..... *longipennis*.

2012. Meliana flammea.

Melia flammea, Curt. Brit. Ent. vi. pl. 201 (1828); Steph. Ill. Brit. Ent., Haust. iv. p. 297; Staud. Cat. Lep. pal. p. 189.
Symira dubiosa, Treit. Schmett. Eur. x. 2, p. 86 (1835).
Nonagria arundinicola, Doubl. List Brit. Lep. p. 7 (1850).
Meliana stenoptera, Staud. Rom. Mém. vi. p. 474 (1892).

Head and thorax whitish tinged with purplish; palpi and legs ochreous; abdomen ochreous white slightly irrorated with fuscous. Fore wing flesh-colour, the costal and inner areas irrorated with fuscous, a red-brown shade from middle of cell to submedian fold, met beyond lower angle of cell by a wedge-shaped shade from termen below apex: the discal and submedian folds tinged with ochreous; the veins white defined by fine brown streaks, the interspaces of terminal area also streaked with brown; a postmedial

Fig. 165.—*Meliana flammea*, ♂. ½.

series of black points nearly erect from costa to vein 4, then very oblique, often almost obsolete; a terminal series of black points. Hind wing white, more or less completely tinged with pale reddish brown; the underside white irrorated with brown, a terminal series of black points.

Ab. 1. *stenoptera*. Smaller; fore wing narrower, the medial fascia more distinct.—Amurland.

Hab. Britain, Leech Coll.; France; Holland; Denmark; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Amurland, Ussuri. *Exp.* 32–40 millim.

Larva. Barrett, Lep. Brit. v. p. 129, pl. 200. f. 2; Meyr. Brit. Lep. p. 66.
Rather light brown; dorsal line pale, dark-edged; subdorsal line, a triple lateral line, and the subspiracular line pale, the last greyish ochreous; head with dark reticulations. Food-plant, *Phragmites*. 8–9. The larva hides by day in the old reed-stems.

2013. Meliana longipennis, n. sp. (Plate XCV. fig. 18.)

♀. Head and thorax pale reddish brown; abdomen whitish, dorsally suffused with fuscous, ventrally tinged with rufous. Fore wing ochreous brown, tinged with rufous except towards costa, and irrorated with fuscous, especially on inner and terminal areas; the veins with fine pale streaks and on terminal half defined by fine brown streaks, the interspaces also streaked with brown; some slight points on termen. Hind wing white, the terminal area suffused with reddish brown from apex to vein 2; the underside

with the costal area tinged with ochreous, some terminal black points from apex to vein 2.

Hab. Br. Centr. Africa, Chiromo (*de Jersey*), 1 ♀ type. *Exp.* 42 millim.

b. (*Neleucania*). Abdomen shorter and stouter; fore wing with the apex less produced.
  a^1. Fore wing with black streak below base of cell.
    a^2. Fore wing with short black streak in end of cell in discal fold.
      a^3. Fore wing with the basal black streak very broad and extending to median nervure ..... *vana.*
      b^3. Fore wing with the basal black streak narrow and not extending to median nervure.
        a^4. Fore wing with veins 3, 4 defined by white streaks. *atrifera.*
        b^4. Fore wing with veins 3, 4 not defined by white streaks ..... *exsul.*
    b^2. Fore wing without black streak in end of cell in discal fold.
      a^3. Fore wing with the white streak on median nervure expanding into a spot at lower angle of cell ..... *vittata.*
      b^3. Fore wing with the white streak on median nervure slender.
        a^4. Fore wing with prominent dark streaks in the interspaces of terminal area.
          a^5. Fore wing with fine black streak in cell above median nervure ..... *sarca.*
          b^5. Fore wing without black streak in cell above median nervure.
            a^6. Fore wing with black point in cell above origin of vein 2 ..... *scotti.*
            b^6. Fore wing without black point in cell above origin of vein 2.
              a^7. Fore wing with dark streak in the cell in discal fold ..... *curvilinea.*
              b^7. Fore wing without dark streak in the cell in discal fold ..... *uniformis.*
        b^4. Fore wing without or with very ill-defined dark streaks in interspaces of terminal area.
          a^5. Fore wing with whitish streak just above median nervure.
            a^6. Hind wing with the veins and terminal area more or less tinged with brown ..... *albilinea.*
            b^6. Hind wing pure white..... *suffusa.*
          b^5. Fore wing with the median nervure prominently streaked with white ..... *limitata.*
  b^1. Fore wing without black streak below base of cell.
    a^2. Fore wing with the veins streaked with white.
      a^3. Hind wing white, sometimes more or less tinged with brown.
        a^4. Fore wing with the median nervure defined below by a brown fascia ..... *stolata.*
        b^4. Fore wing with the median nervure defined above by a brown fascia.
          a^5. Hind wing pure white..... *patricia.*
          b^5. Hind wing with some fuscous irroration ..... *bicolorata.*
        c^4. Fore wing with the median nervure not defined by a brown fascia.
          a^5. Fore wing with small black patch beyond lower angle of cell ..... *bertha.*

b^3. Fore wing without black patch beyond lower angle of cell ..... *rosea.*
b^3. Hind wing wholly suffused with fuscous.
a^4. Fore wing with the costal edge white ..... *niveicosta.*
b^4. Fore wing with the costal edge not white ..... *tenebra.*
b^2. Fore wing with the veins not streaked with white.
a^3. Hind wing uniformly suffused with fuscous ..... *citronella.*
b^3. Hind wing white.
a^4. Fore wing with pale fasciæ in discal and submedian folds, and postmedial series of black points ..... *rubra.*
b^4. Fore wing without markings ..... *prægracilis.*

2014. Meliana vana.

Agrotis vana, Swinh. P. Z. S. 1885, p. 453, pl. 27. f. 9; Hmpsn. Moths Ind. ii. p. 271.

Head, thorax, and abdomen ochreous; palpi black at sides; antennæ blackish; thorax dorsally black, with vinous-red dorsal ridge; abdomen dorsally tinged with fuscous. Fore wing pale ochreous brown, the veins whitish; a black fascia below cell, narrow at base, very strong at middle, and tapering to extremity, followed by a whitish fascia extending to termen; a rather elliptical black streak in cell towards extremity; a black patch below end of cell and another beyond its extremity; a pale oblique fascia from apex to vein 2, with some small dentate black marks on its outer edge, the area beyond it suffused with fuscous; a terminal series of black points; cilia pale purplish red, with a dark line through them. Hind wing ochreous white, the terminal area tinged with fuscous in female.

Hab. Bombay, 1 ♂, Poona (*Swinhoe*), 1 ♂, 2 ♀, type. *Exp.* 30 millim.

2015. Meliana atrifera, n. sp. (Plate XCV. fig. 19.)

♀. Head and thorax ochreous whitish mixed with brown; abdomen ochreous white irrorated with brown. Fore wing ochreous whitish slightly irrorated with brown; a black streak below base of cell; diffused black and brown streaks in cell before middle and at extremity and above and below vein 1 before middle; a pale oblique fascia from apex to vein 1 defined by the interspaces before and beyond it being suffused with brown, and with blackish streaks in them, leaving the veins streaked with white. Hind wing ochreous white tinged with brown, especially on terminal area; the underside whitish slightly irrorated with brown.

Hab. Chili, Valparaiso (*J. J. Walker*), 1 ♀ type. *Exp.* 30 millim.

2016. Meliana exsul. (Plate XCV. fig. 20.)

Leucania exsul, Wlk. ix. 109 (1856).
Leucania tenebrifera, Wlk. ix. 113 (1856).

♂. Head and thorax yellow-brown with a rufous tinge; tegulæ

with medial and terminal black lines; abdomen ochreous tinged with fuscous except anal tuft. Fore wing ochreous brown thickly irrorated with dark brown; a blackish streak below base of cell on a dark brown diffused fascia in and below cell, and thence extending obliquely to termen below apex; a small pale discoidal spot with some black on each side of it; a terminal series of blackish points; a dark line through cilia. Hind wing ochreous irrorated with brown, especially on terminal area; the veins brown; the cilia pale.

Hab. Tristan d'Acunha, 1 ♂ type; hab. ign. 1 ♂ type *tenebrifera*. *Exp.* 38 millim.

2017. Meliana vittata.

Leucania vittata, Hmpsn. Ill. Het. B. M. viii. p. 69, pl. 144. f. 4 (1891); id. Moths Ind. ii. p. 271.

♀. Head, thorax, and abdomen ochreous white with a slight olive tinge; sides of palpi and frons blackish; antennæ blackish; tibiæ and tarsi tinged with black. Fore wing ochreous white with a slight olive tinge; a black streak below basal half of cell; an oblique black streak above inner margin before middle; the cell and area just below and beyond it suffused with olive-brown; a rather dentate white streak on extremity of median nervure, with slight black streaks above, below, and beyond it; the veins of terminal half whitish defined by slight olive-brown streaks, the interspaces of terminal area also streaked with olive-brown; an oblique pale fascia from apex to vein 2, with slight black streaks beyond it below vein 5, the area beyond it suffused with olive-brown; a terminal series of black points; cilia brown intersected with white. Hind wing ochreous white, the terminal area more or less tinged with fuscous; the underside with the costal and terminal areas tinged and irrorated with brown, some black points on apical half of termen.

Hab. Madras, Belgaum (*Watson*), 2 ♀, Nilgiris (*Hampson*), 2 ♀, type; Travancore, Pirmád (*Mrs. Imray*), 1 ♀. *Exp.* 30–38 millim.

2018. Meliana sarca. (Plate XCV. fig. 21.)

Leucania sarca, Hmpsn. Ann. S. Afr. Mus. ii. p. 272 (1902).

Head and thorax whitish tinged with purplish pink and slightly mixed with fuscous; palpi fuscous at sides; abdomen ochreous white, ventrally irrorated with fuscous. Fore wing whitish tinged with purplish pink and irrorated with fuscous; a slight black streak below base of cell; median nervure with prominent white streak defined above by a black streak in cell and with brownish fasciæ above and below it; a black point in lower angle of cell and a brown streak from lower angle to termen above vein 5; a brown fascia from inner margin before middle to termen at vein 2; the veins of terminal half white slightly defined by brown streaks, the

interspaces also streaked with brown; a terminal series of black points; cilia chequered white and brown. Hind wing white, the terminal area suffused with fuscous; the underside with the costal and terminal areas irrorated and suffused with fuscous, a terminal series of black points.

Hab. Br. E. Africa, Machakos (*Crawshay*), 4 ♂, 1 ♀, type, Eb Urru (*Betton*), 2 ♂; Uganda, Mulema (*Doggett*), 1 ♀; Natal, Karkloof (*Marshall*), 1 ♂; Cape Colony, Transkei (*Miss F. Barrett*), 1 ♀. *Exp.* 24–30 millim.

2019. **Meliana scotti.** (Plate XCV. fig. 22.)

Leucania scottii, Butl. Trans. Ent. Soc. 1886, p. 391.

♀. Head and thorax white mixed with pale reddish brown; abdomen white. Fore wing ochreous white tinged with brown-pink; the veins white, defined by fine brown-pink streaks, the median nervure and vein 4 more prominently white; the interspaces of terminal half with brown-pink streaks; a brown shade below median nervure and slight black streak in base of submedian fold; a rather oblique fuscous streak from lower angle of cell to termen above vein 5; black points above median nervure at origin of vein 2 and in lower angle of cell; a terminal series of black points. Hind wing white, the terminal area tinged with brown from apex to vein 2; the underside with the costal area slightly irrorated with brown, some black points on termen from apex to vein 2.

Hab. Queensland, Rockhampton, 1 ♀ type. *Exp.* 28 millim.

2020. **Meliana curvilinea.**

Leucania curvilinea, Hmpsn. Ill. Het. B. M. viii. p. 67, pl. 144. f. 3 (1891); id. Moths Ind. ii. p. 279.

Head and thorax grey strongly suffused with purplish red; tegulæ with two dark lines; abdomen violaceous white, the ventral surface irrorated with black. Fore wing violaceous white irrorated with black; the veins white defined by fine brown streaks; a dark streak in the cell in discal fold and the interspaces of terminal area streaked with black; a slight blackish streak below base of cell and an oblique streak above inner margin before middle; a black point in lower angle of cell; a postmedial series of points bent outwards below costa and oblique below vein 4; a more or less distinct oblique pale fascia from apex defined below by a triangular brownish shade from termen below apex; a terminal series of black points. Hind wing white more or less tinged with brown; the underside ochreous white, the costal area slightly tinged with violaceous.

Hab. Madras, Nilgiris (*Hampson*), 1 ♂, 4 ♀, type, Palnis (*Campbell*), 1 ♂; Ceylon, Gampola (*Mackwood*), 1 ♀, Maskelyia (*Pole*), 1 ♀; Perak, Goping (*Kunstler*), 1 ♂; Hainan, Five-Fingered Mts. (*Whitehead*), 1 ♂. *Exp.* 32–34 millim.

2021. Meliana uniformis. (Plate XCV. fig. 23.)

Leucania uniformis, Moore, P. Z. S. 1881, p. 339; Hmpsn. Moths Ind. ii. p. 280.

♀. Head and thorax whitish tinged with pale pinkish brown; palpi and legs tinged with brown; abdomen whitish, dorsally tinged with brown. Fore wing pale brownish suffused with pink, leaving paler streaks below the cell, in end of cell, and as an oblique series of streaks from beyond end of cell to apex; the veins white defined by fine very slight brown streaks, the interspaces of terminal half also streaked with brown; a slight black streak below base of cell; the antemedial line represented by a black point in submedian fold; a black point in lower angle of cell; a postmedial series of black points, bent outwards below costa and oblique below vein 4; a terminal series of black points. Hind wing white, the veins and termen tinged with ochreous, some black points on termen from apex to vein 2.

Hab. N.W. Himalayas, 1 ♀ type, Dharmsála (*Hocking*), 1 ♂. *Exp.* 34 millim.

2022. Meliana albilinea.

Noctua albilinea, Hübn. Samml. Ex. Schmett. ii. p. 25, ff. 337, 338 (1827); Riley, 9th Rep. Ins. Mo. p. 50, ff. 14, 15; Smith, Cat. Noct. N. Am. p. 186.
Leucania diffusa, Wlk. ix. 94 (1856).
Leucania moderata, Wlk. ix. 114 (1856).
Leucania harveyi, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 9, pl. 1. f. 14 (1873).
Leucania chilensis, Butl. Trans. Ent. Soc. 1882, p. 115.
Leucania obscurior, Smith, Pr. U.S. Nat. Mus. xxv. p. 185 (1902); Dyar, Cat. Lep. N. Am. p. 162.
Leucania tetera, Smith, Pr. U.S. Nat. Mus. xxv. p. 187 (1902); Dyar, Cat. Lep. N. Am. p. 162.
Leucania neptis, Smith, Pr. U.S. Nat. Mus. xxv. p. 188 (1902); Dyar, Cat. Lep. N. Am. p. 162.

Head and thorax brownish ochreous; antennæ with the shaft

Fig. 166.—*Meliana albilinea*, ♂. ½.

white; tegulæ white except the tips which are brown, and with a brown line near base often present; abdomen brownish ochreous. Fore wing ochreous; the costal area purplish grey; the veins slightly streaked with brown; a white streak just above median nervure and some greyish and brown below it, with fine black streaks below base and end of cell; claviform very slightly defined

by black; a black point on angle of discocellulars; the interspaces of terminal area with very slight brown streaks, rather stronger on each side of vein 5; the termen tinged with purplish grey, with some black points on its inner edge running obliquely to the termen below apex and excurved at middle; cilia ochreous with brown lines through them. Hind wing ochreous white, suffused with fuscous brown except towards base, the veins brown; the underside whitish, with the costal and terminal areas irrorated with brown.

Ab. 1. *obscurior*. Hind wing with the veins and terminal area only suffused with fuscous.

Ab. 2. *neptis*. Hind wing with the veins only fuscous.

Ab. 3. *tetra*. Fore wing more ochreous, the costal area tinged with pink towards apex; a dark streak from discoidal point above vein 5.—Arizona.

Hab. Canada, Renfrew Co., 8 ♂, Nova Scotia (*Redman*), 1 ♂ type *moderata*, 1 ♀ type *diffusa*, Manitoba, Cartwright (*Heath*), 1 ♂; U.S.A., East of Rocky Mts., 4 ♂ type *harveyi*, Kansas, 1 ♂, Texas, Dallas (*Boll*), 1 ♂, Colorado, 1 ♀, Durango (*Oslar*), 1 ♂, 2 ♀, New Mexico, Roswell (*Cockerell*), 1 ♀, Arizona (*Poling*), 1 ♀, Huachuca Mts., 1 ♂; Mexico, Mexico City, 1 ♀, Godman-Salvin Coll.; Chili, Coquimbo (*J. J. Walker*) 2 ♂, (*Edmonds*) 1 ♂, 2 ♀, type *chilensis*, Mulchen (*Elwes*), 4 ♂, 1 ♀; Argentina, Florenzia (*Wagner*), 2 ♂. *Exp.* 32–38 millim.

Larva. Head green with brown reticulations. Body uniform green, dorsal line whitish, brown-edged; subdorsal broad, straight, whitish, diffusely brown-edged, a narrow white lateral line; suprastigmatal space dark brown; substigmatal line broad, white, straight, slight brown shading subventrally. No shields.—H. G. D.

2023. Meliana suffusa. (Plate XCV. fig. 24.)

Leucania suffusa, Schaus, Trans. Am. Ent. Soc. xxi. p. 232 (1894).

♂. Head, tegulæ, and outer edge of patagia black mixed with some grey, the back of head and thorax reddish brown; pectus and legs black in front, grey-brown behind; abdomen ochreous tinged with fuscous except anal tuft. Fore wing ochreous, the costal area, discal fold, and area below median nervure and terminal area suffused with fuscous; the veins streaked with black; a black streak below base of cell confluent with the upper edge of the elongate black-defined claviform; black points before and beyond discocellulars and a slight black streak below extremity of cell; the fuscous in lower part of cell and discal fold expanding towards the terminal fuscous band and ending obliquely below apex; cilia ochreous, with a fuscous line through them. Hind wing pure white; the underside with the costal area tinged with ochreous and irrorated with brown.

Hab. Brazil, Castro Paraña, 1 ♂, type † ♂ in Coll. Schaus. *Exp.* 32 millim.

*2024. Meliana limitata.

Leucania limitata, Smith, Pr. U.S. Nat. Mus. xxv. p. 187 (1902); Dyar, Cat. Lep. N. Am. p. 162.

♂. Very pale creamy yellow; head tinged with rufous in front; tegulæ white, greyish at base and with black linear tips. Fore wing with the median nervure streaked with white, defined above by a fuscous-brown streak confluent with the triangular dark shade from termen below apex; the median nervure defined below by a yellow-brown shade, the veins black-edged towards extremity; a slight black streak below base of cell confluent with a very narrow loop-like claviform stigma; terminal area slightly darker. Hind wing white, the costal area on underside slightly darker.

Hab. U.S.A., Texas. *Exp.* 33 millim. This species is unknown to me.

2025. Meliana stolata. (Plate XCV. fig. 35.)

Leucania stolata, Smith, Trans. Am. Ent. Soc. xxi. p. 76, pl. v. f. 8 (1894); Dyar, Cat. Lep. N. Am. p. 163.

♀. Head whitish, the vertex tinged with rufous; tegulæ white with grey tips; thorax pale yellow, with some grey on vertex and black scales on upper edge of patagia; abdomen white, the anal tuft tinged with ochreous, the ventral surface irrorated with brown. Fore wing pale yellow; the costal and inner areas slightly irrorated with black; a slight oblique blackish streak above inner margin before middle; median nervure silvery white, defined below by a rufous fascia; the basal parts of veins 4, 3 white; an ill-defined fuscous fascia between veins 4 and 6 not reaching termen; the veins of terminal area slightly defined by brown streaks and slight streaks also in the interspaces; a black point in lower angle of cell and postmedial points on veins 5 and 2; a terminal series of black points; cilia grey. Hind wing pure white; the underside with the costal area slightly tinged with ochreous and irrorated with fuscous.

Hab. U.S.A., Colorado, Durango (*Oslar*), 1 ♀, Arizona. *Exp.* 40 millim.

*2026. Meliana patricia. (Plate XCV. fig. 26.)

Heliophila patricia, Grote, Bull. Brooklyn Ent. Soc. iii. p. 46 (1880); Smith, Cat. Noct. N. Am. p. 186.

♀. Head and thorax ochreous white, the head and tegulæ strongly tinged with brown; abdomen white. Fore wing ochreous, the costal edge and veins white; a fuscous-brown streak in lower part of cell and above vein 4 to termen; the veins of terminal half defined by fine fuscous streaks; cilia white. Hind wing white. Underside of fore wing with slight brown streaks on the veins.

Hab. U.S.A., Colorado, New Mexico, Hot Springs, 7000′ (*Hulst*), in Coll. J. B. Smith. *Exp.* 30 millim.

2027. **Meliana bicolorata.** (Plate XCV. fig. 27.)

Heliophila bicolorata, Grote, Papilio, i. p. 154 (1881); Smith, Cat. Noct. N. Am. p. 185.

♀. Head and thorax ochreous with a brownish tinge; abdomen ochreous, dorsally tinged with pinkish. Fore wing ochreous: the costal edge and median nervure whitish; the veins slightly defined by pinkish streaks; pinkish fasciæ above median nervure and vein 5 and on inner area; a curved postmedial series of black points usually present, and sometimes an antemedial point on vein 1; a terminal series of slight black points. Hind wing white, with a slight pinkish tinge and some fuscous irroration, especially on the veins; the underside white irrorated with fuscous.

Hab. U.S.A., Colorado, Glenwood Springs, 2 ♀; New Mexico, Merino Valley, Arizona, Chiricahua Mts., Tucson; Mexico, Orizaba, 1 ♀. *Exp.* 32 millim.

2028. **Meliana bertha.**

Meliana bertha, Schaus, Lep. Sierra Leone, p. 34, pl. 3. f. 3 (1893).

♂. Head and thorax grey tinged with purplish and mixed with some fuscous; abdomen pale, the anal tuft tinged with ochreous, some sublateral black points. Fore wing whitish, tinged with purplish pink and rather thickly irrorated with fuscous; the veins defined by slight fuscous streaks, the interspaces of terminal area also streaked with fuscous; a black point in lower angle of cell and a rather conical black spot beyond the angle; a slight oblique fuscous shade from apex; a curved postmedial series of black points on the veins and a terminal series. Hind wing ochreous white, the termen slightly tinged with brown; the underside with some fuscous irroration on costal area and a terminal series of black points.

Hab. Sierra Leone (*Clements*), 1 ♂. *Exp.* 28 millim.

2029. **Meliana rosea.** (Plate XCV. fig. 28.)

Leucania phragmitidicola, Wlk. ix. 97 (1856), nec Guen.
Leucania rosea, Möschl. Verh. zool.-bot. Ges. Wien, xxx. p. 389 (1880).
Leucania solita, Druce, Biol. Centr.-Am., Het. i. p. 262 (part.), nec Wlk.

♀. Head and thorax whitish tinged with pink; abdomen ochreous white. Fore wing pale pink, with diffused yellowish streaks in basal half of submedian fold and in discal fold beyond the cell, then bent upwards to apex; the veins with slight white streaks, more prominent on median nervure and vein 4; the costal and inner areas with slight black irroration; a black point at lower angle of cell; a curved postmedial series of slight black points and a terminal series. Hind wing white, the veins and terminal area slightly tinged with pale brown; the cilia white; the underside

with the costal area tinged with pink, a series of black points on termen from apex to vein 2.

Hab. MEXICO, Jalapa (*Trujillo*), 1 ♀, Godman-Salvin Coll.; CUBA; HAITI (*Tweedie*), 2 ♀; SURINAM. *Exp.* 34 millim.

2030. **Meliana niveicosta.** (Plate XCV. fig. 29.)

Neleucania niveicosta, Smith, Pr. U.S. Nat. Mus. xxv. p. 205 (1902); Dyar, Cat. Lep. N. Am. p. 163.

♀. Head and thorax red-brown; abdomen ochreous, tinged with rufous and irrorated with black. Fore wing rufous, with a reddish tinge especially in cell and on inner area, and irrorated with a few black scales on inner area; the costal edge white; the veins pale defined by slightly darker streaks; a slightly darker streak in and beyond lower part of cell; an obliquely-curved postmedial series of black streaks on veins 6 to 1; a terminal series of slight black points; cilia somewhat pinker, with a slightly darker line through them. Hind wing pale more or less suffused with fuscous brown, the cilia whitish. Underside whitish thickly irrorated with large brown scales; fore wing and costa of hind wing tinged with pink; the cell and veins of terminal half of fore wing suffused with brown.

♂. Hind wing pinkish, with ridges of ochreous hair below vein 6, on vein 4, in submedian fold, and on vein 1.

Hab. U.S.A., Colorado, Glenwood Springs, 2 ♂, 1 ♀. *Exp.* 34 millim.

2031. **Meliana tenebra**, n. sp. (Plate XCV. fig. 30.)

♂. Head and thorax ochreous brown with an olive tinge; sides of palpi and frons fuscous; legs greyish, tinged with purplish pink; abdomen pale ochreous, suffused and irrorated with fuscous. Fore wing greyish ochreous slightly irrorated with fuscous; the veins streaked with white; the cell and apical area tinged with rufous; a rufous fascia below cell, expanding triangularly beyond lower angle to termen; the median nervure slightly defined by black extending to termen below apex as a curved diffused streak; a black and rufous fascia above vein 1 from before middle to termen; a terminal series of small black spots. Hind wing fuscous brown, with some black striæ on termen; cilia white at tips; the underside whitish grey irrorated with fuscous, a discoidal lunule and terminal series of spots.

♀. Brownish ochreous without the rufous tinge; the white streaks on the veins obscured by fuscous streaks; traces of a curved postmedial series of points; the terminal series of spots absent; underside of hind wing without discoidal lunule or terminal series of points.

Hab. BR. E. AFRICA, Eb Urru, 1 ♂ type, Mile 478, Uganda Ry., 1 ♀. *Exp.* 32 millim.

2032. **Meliana citronella.** (Plate XCV. fig. 31.)

Neleucania citronella, Smith, Pr. U.S. Nat. Mus. xxv. p. 206 (1902); Dyar, Cat. Lep. N. Am. p. 164.

♀. Head and thorax pale ochreous; antennæ white; abdomen ochreous, dorsally tinged with brown and ventrally irrorated with brown. Fore wing pale ochreous; the costal edge white; a slightly darker streak in and beyond lower part of cell; an obliquely-curved postmedial series of black points on veins 6–1; cilia white. Hind wing whitish uniformly suffused with fuscous brown, the cilia white. Underside of fore wing ochreous, the subcostal and median nervures and veins beyond the cell suffused with brown to near termen; hind wing white sparsely irrorated with brown, a postmedial series of brown streaks on the veins.

Hab. U.S.A., Colorado, Glenwood Springs, 2 ♀, Denver, in Coll. J. B. Smith. *Exp.* 32 millim.

2033. **Meliana rubra**, n. sp. (Plate XCV. fig. 32.)

Head and thorax pale brown-pink; abdomen pale ochreous. Fore wing pale brown-pink, sparsely irrorated with black and with somewhat paler streaks in submedian and discal folds, the latter bent upwards to apex; costal edge whitish; a subbasal black point in cell and antemedial black points on median nervure and vein 1; an ill-defined blackish spot at lower angle of cell; a postmedial series of black points excurved from costa to vein 4, then incurved; a terminal series of black points. Hind wing semihyaline white, the veins and margins tinged with ochreous; the underside with the costal area slightly irrorated with dark brown, some terminal black points from costa to vein 2.

Hab. Brazil, Petropolis (*Doer*), 1 ♂ type, Rio Janeiro, 1 ♂, 1 ♀. *Exp.* 30 millim.

*2034. **Meliana prægracilis.**

Heliophila prægracilis, Grote, Bull. U.S. Geol. & Geog. Surv. Terr. iii. p. 119 (1877); Smith, Cat. Noct. N. Am. p. 185.

Slender; head and thorax yellowish; abdomen white. Fore wing yellow-white, without markings. Hind wing white.

Hab. U.S.A., Idaho, ? Colorado, ? New Mexico. *Exp.* 30 millim. This species is unknown to me.

Genus **ZOSTEROPODA.**

Type.

Zosteropoda, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 67 (1874)..... *hirtipes.*

Proboscis fully developed; palpi with the 2nd joint oblique, fringed with long hair in front, the 3rd joint porrect, rather long; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with

hair only, without crests; mid and hind tibiæ fringed with very long hair on outer side; abdomen without crests and with lateral fringes of hair on basal segments. Fore wing with the apex produced and acute, the termen nearly straight; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 and 6, 7 stalked; 5 obsolescent from middle of discocellulars; 8 anastomosing with the cell near base; the costa lobed at base; the male with fringes of long hair on upperside below vein 6, on median nervure and vein 3, in submedian fold, and on vein 1 to near termen.

2035. Zosteropoda hirtipes.

Zosteropoda hirtipes, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 68 (1874); id. Ill. Essay, 56, pl. 2. f. 20; Smith, Cat. Noct. N. Am. p. 190.

♂. Head, thorax, and abdomen fulvous orange; antennæ whitish. Fore wing fulvous orange slightly irrorated with red-brown; antemedial line red-brown, oblique from costa to cell,

Fig. 167.—*Zosteropoda hirtipes*, ♂. ½.

where it is angled, then inwardly oblique; a fuscous discoidal spot; postmedial line red-brown, very oblique from costa to vein 6, where it is very acutely angled, then inwardly oblique and slightly excurved; a terminal series of red-brown points. Hind wing ochreous, with the fringes of long hair brownish; the underside irrorated with brown, a fuscous discoidal spot and postmedial line angled at vein 6.

♀ with the postmedial line showing on upperside.

Hab. U.S.A., California, 2 ♂, 2 ♀ type, Grote Coll., (*Walsingham*) 2 ♀. *Exp.* 30 millim.

Larva. Head luteous, reticulate and dotted with brown. Body light straw-brown, reddish reticulate on a pale ground, paler dorsally. Dorsal line pale anteriorly, edged by black dottings, which obscure it on the posterior half of body and form a pronounced powdery dark band, with the outlying tubercles i. and ii. black. Sides with rows of light and dark dots arranged in lines. Substigmatal band broad, pale-edged, reddish filled, with a dark border above which becomes heavy and distinct posteriorly. Feet pale.—H. G. D.

Genus LEUCANIA.

	Type.
Leucania, Ochs. Schmett. Eur. iv. p. 81 (1816), non descr.; Treit. Schmett. Eur. v. (II.) p. 289 (1825)	*pallens.*
Donachlora, Sodoffsky, Bull. Soc. Nat. Mosc. 1837, vi. p. 14 .	*pallens.*
Ichneutica, Meyr. Trans. N.Z. Inst. xix. p. 13 (1887)	*ceraunias.*
Heliophila, Hübn. Tent. ined.	*pallens.*

Proboscis fully developed; palpi upturned, the 2nd joint fringed with hair, the 3rd short, porrect; frons smooth; eyes large, rounded; antennæ of male typically ciliated; head and thorax clothed with hair only and without crests; tibiæ moderately fringed with hair; abdomen with rough hair at base but without crests. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base.

Sect. I. (*Ichneutica*). Antennæ of male bipectinate, with long branches to apex.

A. Fore wing with black fasciæ below base of cell and above inner margin before middle ..... *ceraunias.*
B. Fore wing without black fasciæ..... *dione.*

*2036. Leucania ceraunias.

Ichneutica ceraunias, Meyr. Trans. N.Z. Inst. xix. p. 13 (1887); Hudson, N. Zealand Moths & Butterflies, p. 14, pl. iv. ff. 25, 26.

♂. Head and thorax reddish ochreous; palpi blackish at sides; abdomen ochreous tinged with brown. Fore wing ochreous tinged with rufous, the costal area and cell pale ochreous, emitting dentate marks along veins 6, 4, 3 to towards termen; the area below submedian fold ochreous; a fine black streak in submedian fold to middle with a shorter streak below it; an oblique streak above inner margin before middle. Hind wing ochreous suffused with fuscous brown; the cilia pale at tips; the underside ochreous, the veins and inner half tinged with brown.

♀. Fore wing narrower, the colour dull brown instead of rufous.

Hab. New Zealand, Mt. Arthur, 3500′ (*Hudson*), in Coll. Druce. *Exp.* 44 millim.

*2037. Leucania dione.

Ichneutica dione, Hudson, N. Zealand Moths & Butterflies, p. 14, pl. iv. f. 27 (1898).

♂. Head, thorax, and abdomen fuscous brown. Fore wing fuscous brown, the medial area rather darker; an oblique whitish fascia from median nervure before middle to vein 1 beyond middle; reniform whitish, angled outwards at upper extremity and inwards to a long dentate mark on median nervure; terminal area greyer, with series of dentate brown marks representing the subterminal line and terminal series of lunules. Hind wing pale grey.

Hab. New Zealand, Mt. Arthur, 4400′. *Exp.* 46 millim. This species is unknown to me.

Sect. II. Antennæ of male bipectinate with moderate branches, the apex serrate.

A. Fore wing with the veins fuscous, not irrorated with pale scales ..... *toroneura.*
B. Fore wing with the veins fuscous, irrorated with pale scales.
  a. Hind wing with the cilia ochreous ..... *unica.*
  b. Hind wing with the cilia white, tinged with ochreous at base..... *dunedinensis.*

*2038. Leucania toroneura. (Plate XCVI. fig. 1.)

Leucania toroneura, Meyr. Trans. Ent. Soc. 1901, p. 565.

♂. Head, thorax, and abdomen brownish ochreous tinged with fulvous, the last with the ventral surface irrorated with fuscous. Fore wing brownish ochreous with a slight fulvous tinge; the veins prominently streaked with fuscous. Hind wing ochreous suffused with fuscous; cilia ochreous white; the underside pale brownish ochreous, the veins slightly streaked with fuscous.

Hab. New Zealand, Mt. Cook, type† ♂ in Coll. Meyrick. *Exp.* 34 millim. This may be a variety of *L. unica.*

2039. Leucania unica.

Leucania unica, Wlk. ix. 112 (1856); Hudson, N. Zealand Moths & Butterflies, p. 12, pl. iv. f. 17.
Nonagria juncicolor, Guen. Ent. Mo. Mag. v. p. 2 (1868).

Head and thorax brownish ochreous with a slight fulvous tinge; abdomen brownish ochreous, whitish at base. Fore wing brownish

Fig. 168.—*Leucania unica,* ♂. ½.

ochreous with a fulvous tinge; the veins slightly streaked with fuscous; the antemedial line represented by black points on subcostal and median nervures and vein 1; the postmedial line represented by a series of black points on the veins excurved from costa to vein 4, then oblique. Hind wing pale brownish more or less strongly suffused with fuscous, the cilia ochreous; the underside greyish ochreous irrorated with fuscous.

Hab. New Zealand, Marlborough (*Skellon*), 3 ♂, 1 ♀, type. *Exp.* 34 millim.

2040. Leucania dunedinensis. (Plate XCVI. fig. 2.)

Spælotis dunedinensis, Butl. ? ined.

♂. Head, thorax, and abdomen pale ochreous brown. Fore wing ochreous brown; the veins slightly darker and irrorated with white

scales; slight white points in and beyond lower angle of cell; a curved postmedial series of white points on the veins. Hind wing ochreous brown; cilia white, tinged with ochreous at base. Underside of fore wing with the marginal areas suffused with whitish; hind wing whitish irrorated with brown.

Hab. New Zealand, Dunedin (*Purdie*), 1 ♂ type. *Exp.* 36 millim.

Sect. III. Antennæ of male minutely serrate and fasciculate.

A. Fore wing with dark streak in base of submedian fold ... *semivittata.*
B. Fore wing without dark streak in base of submedian fold. *blenheimensis.*

2041. Leucania semivittata.

Leucania semivittata, Wlk. xxxii. 628 (1865); Hudson, New Zealand Moths & Butterflies, p. 13, pl. iv. ff. 21, 22.

Head and thorax ochreous tinged with rufous; spurs banded with black; abdomen ochreous irrorated with brown. Fore wing

Fig. 169.—*Leucania semivittata*, ♂. ½.

ochreous; a rufous fascia below the cell to below origin of vein 2, faintly continued as a curved mark to vein 2 beyond the cell, and a slight oblique streak above inner margin near base; a subbasal black point in cell and three antemedial points on the veins; three points in upper part of outer half of cell and a slight streak in lower part; a rufous shade below median nervure continued beyond the cell to meet a slight triangular shade from termen below apex; a black point just beyond lower angle of cell; a postmedial series of points bent outwards below costa, oblique below vein 4; a terminal series of points. Hind wing ochreous suffused with fuscous; cilia ochreous; the underside ochreous, the costal area slightly tinged with rufous, a discoidal point, some postmedial streaks on the veins, and some striæ on termen sometimes present.

Hab. New Zealand (*J. J. Walker*), 1 ♂, 1 ♀, Auckland (*Oxley*), 1 ♂ type, (*Mathew*) 1 ♂, 1 ♀. *Exp.* 42 millim.

*2042. Leucania blenheimensis. (Plate XCVI. fig. 3.)

Leucania blenheimensis, Fereday, Trans. N.Z. Inst. xv. p. 196 (1882); Hudson, N. Zealand Moths & Butterflies, p. 13, pl. iv. f. 23.

♂. Head and thorax ochreous tinged with rufous; sides of palpi and frons blackish; pectus and fore legs in front fuscous; fore tarsi black ringed with ochreous; abdomen ochreous with a slight rufous

tinge, the ventral surface irrorated with fuscous. Fore wing ochreous tinged with rufous, the veins whitish irrorated with fuscous; the antemedial line represented by slight black points on the veins; a minute streak at lower angle of cell; a postmedial series of slight points, bent outwards below costa and oblique below vein 4; the veins slightly streaked with fuscous at apex; cilia fuscous. Hind wing ochreous suffused with fuscous brown, especially towards termen; cilia whitish with some brown at base; the underside ochreous whitish slightly irrorated with brown.

Hab. New Zealand, Blenheim, in Coll. Meyrick, Napier. *Exp.* 46 millim.

Sect. IV. Antennæ of male ciliated.

A. Fore wing with the apex produced and acute.

2043. Leucania sulcana.

Leucania sulcana, Fereday, Trans. N.Z. Inst. xii. p. 267, pl. ix. f. 3 (1880); Hudson, N. Zealand Moths & Butterflies, p. 13, pl. iv. ff. 19, 20.

Head and thorax ochreous tinged with olive-brown; palpi red-brown at sides; a few black scales near upper edge of tegulæ and

Fig. 170.—*Leucania sulcana*, ♂. ½.

patagia; abdomen black-brown, the anal tuft and ventral surface ochreous. Fore wing ochreous, the costal edge fulvous; the inner area and the costal area towards apex with some dark irroration; the veins pale; the interspaces of terminal area streaked with reddish brown, a black streak in base of submedian fold followed by rufous suffusion above the fold; a diffused rufous fascia above vein 4; a slight oblique streak above inner margin before middle; a subbasal black point in cell; antemedial black points in cell and on vein 1; a point beyond lower angle of cell and postmedial points on veins 6, 3, 1; a terminal series of black points. Hind wing deep dark brown. Underside ochreous yellow suffused with fuscous brown except costal and inner areas of both wings.

Tegulæ somewhat produced to a dorsal ridge; fore wing with the apex produced and acute.

Hab. New Zealand (*J. J. Walker*), 1 ♂, Akaroa, Dunedin (*Mathew, Purdie*), 1 ♂, 1 ♀. *Exp.* 46 millim.

B. Fore wing with the apex not produced and acute.
a. Abdomen of male with slight blackish ventral tufts from base.

2044. Leucania littoralis.

Leucania littoralis, Curt. Brit. Ent. v. pl. 157 (1827); Steph. Ill. Brit. Ent., Haust. iii. p. 74; Staud. Cat. Lep. pal. p. 193.

Head, thorax, and abdomen pale ochreous brown, the last with the ventral tufts of hair of male blackish. Fore wing pale ochreous brown, the costal area rather paler; the median nervure with prominent white fascia slightly defined by fuscous, continued as

Fig. 171.—*Leucania littoralis*, ♂. ½.

slight streaks on base of veins 2, 3 and on vein 4 to termen; slight white streaks on veins 6, 7, 8 towards termen; the interspaces of terminal area with slight brown streaks. Hind wing pure white. Underside white slightly tinged with ochreous.

Hab. Britain, England (*Doubleday*), Zeller, Frey, and Leech Colls., Ireland, Derry (*Salvage*), Leech Coll.; France; Belgium; Holland; Denmark; Germany; Spain, Bilbao, Andalucia; Italy (*Heyne*), Leech Coll. *Exp.* 40–44 millim.

Larva. Meyr. Brit. Lep. p. 69; Barrett, Lep. Brit. v. p. 157, pl. 204. f. 1.

Pale pinkish ochreous, grey, or greenish; dorsal and subdorsal lines white, dark-edged; lateral line sometimes white; spiracular line pale or whitish; head pale brown. Food-plant, *Ammophila arundinacea*. 8–5.

b. (*Leucania*). Abdomen of male without blackish ventral tufts.
  a^1. Fore wing without oblique white fascia from apex.
    a^2. Fore wing with fine dark streaks in interspaces of terminal area.
      a^3. Hind wing uniformly tinged with fuscous.
        a^4. Fore wing with the veins not streaked with white.
          a^5. Hind wing with the cilia ochreous ..... *favicolor*.
          b^5. Hind wing with the cilia white ..... *rubripallens*.
        b^4. Fore wing with the veins streaked with white.
          a^5. Fore wing tinged with rufous ..... *fuliginosa*.
          b^5. Fore wing not tinged with rufous..... *oxygala*.
      b^3. Hind wing white more or less suffused with fuscous.
        a^4. Fore wing with fuscous shade below median nervure.
          a^5. Fore wing with veins 3, 4 prominently streaked with white ..... *albiradiosa*.

b^1. Fore wing with veins 3, 4 not prominently streaked with white.
a^6. Tegulæ without dark lines ..... *minorata*.
b^6. Tegulæ with two dark lines ..... *straminea*.
b^4. Fore wing without fuscous shade below median nervure.
a^5. Fore wing with the streak on median nervure not forming a white point at lower angle of cell.
a^6. Fore wing with black point in lower angle of cell ..... *pallens*.
b^6. Fore wing without black point in lower angle of cell ..... *impuncta*.
b^5. Fore wing with the streak on median nervure forming a white point at lower angle of cell. *obsoleta*.
b^3. Fore wing without fine dark streaks in interspaces of terminal area.
a^3. Hind wing uniformly suffused with fuscous ..... *pudorina*.
b^3. Hind wing white, the veins and terminal area tinged with fuscous ..... *languida*.
b^1. Fore wing with oblique white fascia from apex ..... *niveilinea*.

2045. Leucania favicolor.

Leucania favicolor, Barrett, Ent. Month. Mag. 1896, p. 100; id. Lep. Brit. v. p. 141, pl. 201. f. 3; Staud. Cat. Lep. pal. p. 191.

Head and thorax pale olive-brown; abdomen pale fuscous brown, whitish at base, the anal tuft of male ochreous, the ventral surface irrorated with black. Fore wing pale olive-brown; the veins very indistinctly defined by slight brown streaks, the interspaces also with indistinct streaks, more prominent on terminal area; traces of a minute black point in lower angle of cell; traces of a more or less complete postmedial series of black points, bent outwards below costa and oblique below vein 4, often reduced to points on veins 5 and 2. Hind wing whitish, almost uniformly tinged with fuscous; the cilia ochreous white; the underside with the costal and terminal areas sparsely irrorated with fuscous, a postmedial series of slight dark streaks on the veins, some black points on apical part of termen.

Ab. 1. Much yellower.

Ab. 2. Head, thorax, and fore wing bright rufous; the abdomen and hind wing slightly tinged with rufous.

Hab. Britain, Essex, Harwich (*Mathew*), 1 ♂, 2 ♀. *Exp.* 42 millim.

2046. Leucania rubripallens. (Plate XCVI. fig. 4.)

Leucania rubripallens, Smith, Pr. U.S. Nat. Mus. xxv. p. 182 (1902); Dyar, Cat. Lep. N. Am. p. 162.

Head and thorax pale brownish ochreous; abdomen ochreous white irrorated with black. Fore wing pale rufous; the veins rufous defined by fine brown streaks, the interspaces also streaked with brown; traces of postmedial black points on veins 5 and 2; a

terminal series of black points. Hind wing pale, uniformly suffused with fuscous; the cilia white. Underside of fore wing fuscous, except marginal areas which are yellowish white irrorated with brown, as also the hind wing; both wings with terminal series of black points.

Hab. Canada, Br. Columbia, Kaslo (*Cockle*), 1 ♀; U.S.A., Colorado, Glenwood Springs, 1 ♂. *Exp.* 34 millim.

2047. Leucania fuliginosa.

Noctua fuliginosa, Haw. Lep. Brit. p. 174 (1809).
Noctua punctina, Haw. Lep. Brit. p. 174 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 75; Wood, Ind. Ent. f. 363.
Noctua impura, Hübn. Samml. Eur. Schmett., Noct. f. 396 (1827); Dup. Lép. Fr. vii. p. 73, pl. 105. f. 3; Steph. Ill. Brit. Ent., Haust. iii. p. 75; Herr.-Schäff. Eur. Schmett., Noct. ff. 319–20; Staud. Cat. Lep. pal. p. 191.
Leucania dungana, Alph. Hor. Soc. Ent. Ross. xvii. p. 83, pl. 3. f. 56 (1883).
Leucania transbaikalensis, Staud. Iris, v. p. 367 (1892).
Leucania amurensis, Staud. Iris, v. p. 367 (1892).

Head and thorax brownish ochreous; antennæ whitish at base; abdomen pale ochreous, ventrally irrorated with fuscous. Fore wing ochreous; the veins whiter, the median nervure more prominently so, defined by fine red-brown streaks, the interspaces also streaked with red-brown; slight black irroration on costal and inner areas; a brown shade below median nervure with some black irroration on it; a black point in lower angle of cell; post-medial black points on veins 5 and 2. Hind wing yellowish white nearly uniformly suffused with fuscous brown; the costal area paler; the cilia white; the underside irrorated with dark brown, some black points on apical part of termen.

Ab. 1. *transbaikalensis*. Fore wing irrorated with red-brown, the dark streaks almost obsolete.—Dauria.

Ab. 2. *dungana*. Much browner or more fuscous; fore wing with the dark streaks indistinct; hind wing nearly uniform fuscous.—W. and E. Turkestan, Tibet.

Ab. 3. *amurensis*. Darker; fore wing with the whitish veins and dark streaks more distinct.—Amur.

Hab. Britain, England, Ireland, Leech Coll.; France; Denmark; Germany, Zeller, Frey, and Leech Colls.; N. Italy; Sweden; Russia, Urals; Asia Minor, Bythinia; Syria; W. Turkestan, Issyk Kul; E. Turkestan, Kuldja, 1 ♂, 1 ♀, Kashgar; Tibet, Kuku-noor; E. Siberia, Dauria, Amur; Japan. *Exp.* 36 millim.

Larva. Meyr. Brit. Lep. p. 71; Barrett, Lep. Brit. v. p. 137, pl. 201. f. 2.

Pale greyish ochreous, sometimes tinged with reddish; dorsal, subdorsal, and lateral lines whitish, edged with dark brown, the subdorsal more strongly above; spiracular line brown or dark brown; head pale brownish with darker markings. Food-plants, Grasses. 9–5.

2048. **Leucania oxygala.** (Plate XCVI. fig. 5.)

Heliophila oxygala, Grote, Can. Ent. xiii. p. 14 (1881); Smith, Cat. Noct. N. Am. p. 185.

♂. Head, thorax, and abdomen pale ochreous tinged with brownish, the last with slight dark irroration. Fore wing pale brownish ochreous; the veins whitish defined by fine brown streaks; the interspaces with fine brown streaks except on costal area; a black point in lower angle of cell. Hind wing fuscous, the cilia white; the underside pale thickly irrorated with fuscous, some black points on termen.

Hab. U.S.A., Colorado, 1 ♂ type. *Exp.* 36 millim.

*2049. **Leucania albiradiosa.** (Plate XCVI. fig. 6.)

Leucania albiradiosa, Ev. Bull. Mosc. 1852, i. p. 158; Herr.-Schäff. Neue Schmett. f. 14; Staud. Cat. Lep. pal. p. 193.

Head and thorax ochreous tinged with olive-brown; abdomen ochreous white slightly tinged with brown. Fore wing ochreous, the veins streaked with white, the median nervure and veins 3, 4 more strongly so; the veins defined by fine brown streaks, the interspaces also streaked with brown, the discal fold from cell to termen with stronger streak, the median nervure defined below by brown suffusion. Hind wing white, the veins and terminal half more or less tinged with fuscous brown; the underside white, the costal area irrorated with brown.

Hab. Russia, Urals; W. Siberia, Altai; W. Turkestan, Issyk Kul; E. Turkestan, Ili, in Coll. Püngeler. *Exp.* 38 millim.

2050. **Leucania minorata.** (Plate XCVI. fig. 7.)

Leucania minorata, Smith, Trans. Am. Ent. Soc. xxi. p. 75, pl. v. f. 11 (1894); Dyar, Cat. Lep. N. Am. p. 162.

♂. Head and thorax ochreous with an olive tinge; abdomen white irrorated with black, the anal tuft ochreous. Fore wing olive ochreous; the veins defined by pale rufous streaks; the interspaces towards termen with fine rufous streaks; some diffused black scales below median nervure, sometimes a few on inner margin and as streaks above veins 2, 3; a slight oblique streak above inner margin before middle; a black point in lower angle of cell and postmedial points on veins 5 and 2; sometimes traces of a postmedial line bent outwards below costa, excurved to vein 4, then oblique; some black points on termen. Hind wing white, tinged with brown and irrorated with black scales, except towards base and costa; the underside with the costal and terminal areas slightly irrorated with black, a small discoidal black spot, postmedial series of short streaks on the veins and terminal series of points.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 3 ♂, Br. Columbia, Revelstoke (*Mrs. Nicholl*), 1 ♂, Kaslo (*Cockle*), 4 ♂, 3 ♀, Vancouver (*Livingston*), 1 ♂; U.S.A., Oregon, California. *Exp.* 34 millim.

2051. Leucania straminea.

Leucania straminea, Treit. Schmett. Eur. v. 2, p. 297 (1825); Dup. Lép. Fr. Suppl. iii. p. 346, pl. 32. f. 2; Frr. Neu. Beitr. Schmett. ii. f. 123; Herr.-Schäff. Eur. Schmett., Noct. ff. 321–323; Staud. Cat. Lep. pal. p. 191.

Head and thorax brownish ochreous; tegulæ with two dark lines defined by grey; abdomen ochreous, whitish at base. Fore wing pale ochreous irrorated with a few black scales; the veins defined by fine brown-pink streaks, the interspaces also streaked with brown-pink; the median nervure defined below by diffused brown-pink; a slight black point in lower angle of cell; postmedial black points on veins 5 and 2 and sometimes traces of a complete series bent outwards below costa and oblique below vein 4; a terminal series of black points. Hind wing white, the disk more or less suffused with fuscous and with some postmedial dark streaks on the veins; the underside sparsely irrorated with black, a discoidal lunule and some points on termen.

Hab. Britain, Leech Coll.; France; Germany, Frey and Leech Colls.; Russia, Urals. *Exp.* 34–40 millim.

Larva. Meyr. Brit. Lep. p. 71; Barrett, Lep. Brit. v. p. 144, pl. 202. f. 2. Brownish ochreous freckled with grey; dorsal, subdorsal, and lateral lines pale, edged with dark grey; subspiracular line pale ochreous; head brownish ochreous. Food-plants: *Phragmites* and Grasses. 9–5.

2052. Leucania pallens.

Noctua pallens, Linn. Syst. Nat. x. p. 510 (1758); Clerck, Icon. pl. 4. f. 6; Esp. Schmett. pl. 90. f. 1; Hübn. Samml. Eur. Schmett., Noct. p. 234; Dup. Lép. Fr. vii. p. 68, pl. 105. f. 1; Steph. Ill. Brit. Ent., Haust. iii. p. 76; Staud. Cat. Lep. pal. p. 191; Smith, Cat. Noct. N. Am. p. 185.

Noctua ectypa, Hübn. Samml. Eur. Schmett., Noct. f. 231 (1827).

Heliophila pertracta, Morr. Proc. Bost. Soc. N. H. xviii. p. 120 (1875); Smith, Cat. Noct. N. Am. p. 186.

Leucania melania, Staud. Stett. ent. Zeit. 1889, p. 48.

Leucania infumata, Alph. Rom. Mém. v. p. 166 (1889).

Leucania luteopallens, Smith, Proc. U.S. Nat. Mus. xxv. p. 180 (1902); Dyar, Cat. Lep. N. Am. p. 162.

Head and thorax ochreous, slightly tinged with brown on head

Fig. 172.—*Leucania pallens*, ♂. ½.

and tegulæ; abdomen ochreous white. Fore wing ochreous, the veins whitish defined by fine brown streaks; the interspaces with fine brown streaks; a black point in lower angle of cell, sometimes

almost obsolete; postmedial black points on veins 5 and 2 sometimes present. Hind wing white tinged with ochreous, especially towards termen, the veins and terminal area sometimes tinged with fuscous; the underside white irrorated with brown, a slight discoidal lunule and sometimes some postmedial striæ on the veins.

Ab. 1. *ectypa*. Fore wing tinged with rufous.

Ab. 2. *melania*. Hind wing grey; fore wing fuscous below.—W. and E. Turkestan, Tibet.

Hab. Canada, Renfrew Co., 3 ♀, Hastings, 2 ♂; U.S.A., except S. States, New Hampshire, 1 ♂, co-type *luteopallens*, Massachusetts (*Packard*), 2 ♂, 4 ♀, Newton Highlands, 1 ♂, New York, Trenton Falls (*Doubleday*), 1 ♂, California, 1 ♂; Britain, Forres (*Salvage*), England, Leech Coll., Derry (*Salvage*); France, Sand Coll.; Germany, Zeller and Frey Colls.; Switzerland; N. Spain; Italy; Scandinavia; Russia, Livonia, Zeller Coll.; Rumelia; Siberia; W. Turkestan, Buchara, Ferghana, Issyk Kul; E. Turkestan, Ili; Mongolia, Uliassutai; Tibet, Kuku-noor; Amurland, Ussuri. *Exp.* 30–38 millim.

Larva. Meyr. Brit. Lep. p. 71; Barrett, Lep. Brit. v. p. 140, pl. 202. f. 1.

Ochreous or greyish ochreous; dorsal line whitish edged with dark grey followed by a brownish shade; subdorsal line whitish edged above strongly with grey, below by brown; lateral and subspiracular lines pale ochreous; spiracular line grey; head marked with brown. Food-plant, Grasses. 9–5.

2053. **Leucania impuncta.** (Plate XCVI. fig. 8.)

Leucania impuncta, Guen. Noct. i. p. 83 (1852).
Leucania decolorata, Blanch. Gay's Chile, vii. p. 81, pl. 4. f. 9 (1854).

Head and thorax ochreous; abdomen ochreous white, dorsally slightly tinged with fuscous towards extremity. Fore wing ochreous; the veins whitish defined by fine pale brown lines; the interspaces with fine pale brown lines; a terminal series of black points. Hind wing semihyaline white, the veins and termen slightly tinged with ochreous and fuscous.

Hab. Chili (*Edmonds*), 2 ♂, 2 ♀, Coquimbo (*J. J. Walker*), 2 ♂, 1 ♀, Chillan (*Elwes*), 1 ♀. *Exp.* 44 millim.

2054. **Leucania obsoleta.**

Noctua obsoleta, Hübn. Samml. Eur. Schmett., Noct. f. 233 (1827); Dup. Lép. Fr. vii. p. 77, pl. 105. f. 5; Steph. Ill. Brit. Ent., Haust. iii. p. 74; Herr.-Schäff. Eur. Schmett., Noct. ff. 303–6; Staud. Cat. Lep. pal. p. 191.

Head and thorax ochreous, usually tinged with rufous and irrorated with fuscous; fore tarsi black ringed with whitish; abdomen whitish, tinged with ochreous and irrorated with fuscous. Fore wing ochreous, more or less tinged with rufous and irrorated with black; the veins whitish defined by more or less prominent fine black or brown streaks; the cell and interspaces of terminal

half also with dark streaks; a white point at lower angle of cell; a postmedial series of black points on the veins, oblique below vein 4; a terminal series of black points; cilia with two brown lines through them. Hind wing white; the veins brown; the terminal area suffused with brown; the underside with the costal area irrorated with black, a discoidal point, postmedial series of short streaks on the veins, and terminal series of points.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Corsica; Italy: Balkan States; Scandinavia; Russia, Livonia, Zeller Coll.; W. Turkestan, Issyk Kul; Tibet, Kuku-noor. *Exp.* 38–40 millim.

Larva. Meyr. Brit. Lep. p. 70; Barrett, Lep. Brit. v. p. 147, pl. 203. f. 1.

Pale greyish ochreous, sometimes tinged with reddish or greenish; dorsal line pale, edged with green; subdorsal line pale or whitish with dark edges; lateral line whitish; spiracular line darker or green: head marked with brown. Food-plant, *Phragmites*, the larva hiding in the stems by day. 8–9.

2055. Leucania pudorina.

Noctua pudorina, Schiff. Wien. Verz. p. 85 (1775); Hübn. Eur. Schmett., Noct. ff. 401, 495; Dup. Lép. Fr. vii. p. 75, pl. 105. f. 4; Steph. Ill. Brit. Ent., Haust. iii. p. 80; Herr.-Schäff. Eur. Schmett., Noct. ff. 329–331.

Noctua impudens, Hübn. Eur. Schmett., Noct. f. 229 (1827); Staud. Cat. Lep. pal. p. 191.

Leucania obscurata, Staud. Rom. Mém. vi. p. 474 (1892).

Head and thorax grey, tinged with purplish pink and irrorated with fuscous; abdomen more or less tinged with rufous, especially in male. Fore wing grey, tinged with purplish pink and thickly irrorated with fuscous; the veins whitish; a slight fuscous streak above median nervure and vein 4 dilated into a wedge-shaped patch towards tornus; a wedge-shaped fuscous patch from upper angle of cell to apex and diffused streaks in the interspaces of terminal area between vein 4 and tornus. Hind wing pinkish white uniformly suffused with fuscous, the cilia pinkish. Underside of fore wing fuscous, the veins, costal and terminal areas pinkish; hind wing pinkish irrorated with fuscous.

Ab. 1. *obscurata*. Darker; fore wing with more and more distinct dark streaks.—Ussuri.

Hab. Britain, Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.; N. Italy; Dalmatia; Sweden; Russia, Urals, Zeller Coll., Sarepta, Leech Coll.; Armenia; Asia Minor, Bithynia; E. Siberia, Amurland, Ussuri. *Exp.* 38–44 millim.

Larva. Meyr. Brit. Lep. p. 71; Barrett, Lep. Brit. v. p. 134, pl. 201. f. 1.

Pale ochreous brown; dorsal line pale edged with blackish, and with a dark line below it; subdorsal line pale or whitish edged with blackish, most strongly above; lateral line dark-edged; spiracular line fuscous; head pale brown with darker markings. Food-plants: *Phragmites* and Grasses. 9–4.

2056. Leucania languida. (Plate XCVI. fig. 9.)

Leucania languida, Staud. Iris, x. p. 284, pl. 9. f. 15; id. Cat. Lep. pal. p. 191.

♂. Head, thorax, and abdomen brownish ochreous, the last whitish at base; palpi blackish at sides. Fore wing brownish ochreous, the veins slightly irrorated with fuscous; traces of a postmedial series of points bent outwards below costa and oblique below vein 4. Hind wing white, the veins and terminal area tinged with ochreous; the underside with the costal area tinged with ochreous.

Hab. Syria, 1 ♂. *Exp.* 34 millim.

*2057. Leucania niveilinea. (Plate XCVI. fig. 10.)

Chloridea niveilinea, Schaus, Trans. Am. Ent. Soc. xxi. p. 239 (1894).

♂. Head and thorax brownish ochreous and white; abdomen pale brown, whitish below. Fore wing golden fulvous; a silvery white subcostal fascia from base ending in a point beyond middle; a fascia on medial part of median nervure and base of vein 2, where it is met by an oblique fascia from apex, emitting short streaks on its outer side on veins 2, 3, 4, 5; a fascia on vein 1 from base to beyond middle; cilia white at tips. Hind wing pale brown; the cilia white at tips; the underside white slightly tinged with brown.

Hab. Mexico, Las Vigas, type † ♂ in Coll. Schaus. *Exp.* 30 millim.

ADDENDA AND CORRIGENDA.

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1168. **Scotogramma peculiaris**, *add* (Plate LXXIX. fig. 9.)

Page 45. *1183 *a*. **Anarta laerta.**

Anarta laerta, Smith, J. N.Y. Ent. Soc. xi. p. 20 (1903).

Head and thorax black mixed with fuscous-brown hair and scales; tegulæ and patagia with pale tips; abdomen black. Fore wing fuscous brown, the cell rather paler; subbasal line defined by pale colour on inner side, dentate at the veins; antemedial line single, rather evenly excurved; claviform moderate or small, defined by black and sometimes filled in with black; orbicular round, variable in size and defined by black or filled in with black; reniform large, black-brown, sometimes constricted at middle; a dark medial shade approximated below the cell to the postmedial line, which is single, dentate, bent outwards below costa, excurved to vein 4, then slightly incurved; subterminal line pale, sometimes interrupted, defined on inner side by obscure spots and shades; terminal area darkening to an interrupted black terminal line; cilia pale at tips. Hind wing dirty white, the inner and terminal areas broadly black, connected with the large black discoidal lunule; the base blackish; cilia whitish; the underside with large black discoidal lunule and sometimes a diffused whitish subterminal line.

Hab. U.S.A., Washington, Mt. Rainier, Utah, Silver Lake. *Exp.* 22–27 millim. This species is unknown to me.

Page 46. 1186. **Anarta mausi**, Püng. Soc. Ent. xix. p. 130 (1904).

Page 48. *1189 *a*. **Lasiestra albinuda.**

Scotogramma albinuda, Smith, J. N.Y. Ent. Soc. xi. p. 19 (1903).

♀. Dark ashen grey with a fuscous tinge. Fore wing with the lines single, diffused, indistinct; subbasal line very near base, incurved below costa; antemedial line erect, irregular, strongly excurved in submedian interspace; orbicular moderate, round, barely traceable; reniform rather small, dark; a medial shade distinct towards costa, obsolescent below cell; postmedial line lunulate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line sometimes represented by some pale scales, defined on inner side by a dark shade, distinct towards costa, obsolescent towards inner margin; a terminal series of dark lunules; cilia slightly intersected with white and with pale line through them. Hind wing deep fuscous brown; a dark medial shade followed by some diffused yellowish; a large black discoidal spot; cilia pale; the underside whitish or fuscous with darker irroration, a large discoidal spot and postmedial shade.

Hab. Canada, Labrador, Rama. *Exp.* 32–33 millim. This species is unknown to me.

Page 65. *1215. **Polia nævia**, *read* (Plate LXXXVI. fig. 5.)

Page 65. *1215 *a*. **Polia bilinea.** (Plate XCVI. fig. 11.)

Hadena bilinea, Wilem. ined.

♂. Head and thorax purplish brown mixed with grey; abdomen grey-brown. Fore wing reddish brown suffused with purple-grey, especially on basal inner area and medial area; subbasal line black, waved, from costa to submedian fold; antemedial line strong, black, slightly curved; claviform moderate, incompletely defined by black; orbicular and reniform rather small, with pale brown centres and blue-grey annuli defined by black, the former sometimes rather elongate and conjoined by a black streak to the latter, which is somewhat constricted at middle; postmedial line strong, black, incurved and slightly sinuous from vein 6 to inner margin; faint traces of an irregular grey subterminal line; a terminal series of small black lunules. Hind wing uniform reddish brown; the underside brown suffused with grey, a small discoidal lunule and traces of postmedial line on costal area.

Hab. Japan, Tokio, type † ♂ in Coll. Wileman. *Exp.* 26–30 millim.

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1252. **Polia insolens**, *add* (Plate LXXX. fig. 29.)

Page 132. *1303 *a*. **Polia imitata.**

Mamestra imitata, Mssn. Stübel's Reise, p. 141, pl. vi. f. 31 (1890).

♀. Head and thorax greenish grey; patagia edged with black; abdomen grey. Fore wing greenish grey suffused and irrorated with fuscous; subbasal line represented by a pale striga below cell defined on each side by black; antemedial line oblique from costa to median nervure, then strongly excurved; claviform only defined by a clavate white mark beyond it; orbicular and reniform greenish grey defined by black, the former rounded, the latter open above and below and angled inwards on median nervure; postmedial line minutely waved, slightly bent outwards below costa, excurved to vein 4, then oblique, the area beyond it paler; subterminal line represented by a black striga from costa, then a white line dentate on veins 4, 3 and with black beyond it. Hind wing white, the terminal area tinged with fuscous.

Hab. Ecuador, Collanes-am-Altar, 1100′. *Exp.* 44 millim. This species is unknown to me; structural characters examined by Prof. Karsch.

Page 136. 1309. **Polia pisi** insert ab. *saltdalensis*, Strand, Arch. Naturv. Christian. xxv. no. 9, p. 11 (1903).

Norway, Saltdalen.

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*1325 *a*. **Polia albifluviata.** (Plate XCIV. fig. 2.)

Mamestra albifluviata, Druce, A. M. N. H. (7) xv. (April 1905).

♂. Head white, palpi except end of 2nd joint, frons and band

between antennæ black; antennæ black, ringed with white at base; tegulæ brownish white tipped with black; thorax black mixed with white, the pectus irrorated with white and the tarsi ringed with white; abdomen black, whitish at base, with sublateral tufts of long white hair, the ventral surface irrorated with white. Fore wing dark purplish grey; subbasal line white, defined on each side by black patches below costa and cell, waved, from costa to vein 1; antemedial line white defined on each side by black, represented by an oblique striga in cell, an angled mark in submedian interspace, and a medial striga on inner margin; claviform only defined by a clavate white mark beyond it; orbicular and reniform greenish white, very large, extending to costa and connected by a streak above median nervure, the former oblique elliptical, the latter with its lower extremity connected with the greenish-white terminal area, which is slightly irrorated with black and strongly angled inwards above and below middle; postmedial line white defined by black, minutely waved, interrupted, oblique towards costa and below vein 4, some white points on costa beyond it; subterminal black patches on costa, at middle, and above tornus; small white patches on inner margin before antemedial and beyond postmedial line; cilia chequered white and black. Hind wing white, the costal and terminal areas fuscous brown, the latter narrowing to tornus; cilia intersected with white except towards apex; the underside with the costal area irrorated with white, a black discoidal spot.

Hab. Colombia, Honda, 1000′ (*Wheeler*), type in Coll. Druce. *Exp.* 36 millim.

Page 147. ***1325 *b*. Polia hieroglyphera.**

Moma hieroglyphera, Mssn. Stübel's Reise, p. 137, pl. v. f. 17 (1890).

Head and thorax bluish grey; tegulæ with fuscous tips; patagia and thorax with fuscous patches; abdomen grey suffused with fuscous. Fore wing grey-white; a small black spot at base and subbasal spots on costa and inner margin; an antemedial triangular patch on costa and another below the cell; claviform represented by a triangular black patch with oblique mark below it on inner margin; orbicular and reniform only defined by a black spot before them in cell, a triangular patch between them emitting two arms to costa and a triangular patch beyond them; postmedial line only represented by a striga from costa, a triangular patch before it below the cell, and a conical patch on inner margin; a V-shaped black mark on costa before apex with a black spot between its arms; an oblique subterminal black mark at middle and an oblong patch above tornus; cilia chequered black and white. Hind wing white, the apical area fuscous, narrowing to a point at vein 1. Underside of fore wing fuscous with some whitish on disk; hind wing white, with the costal and apical areas fuscous.

Hab. Ecuador, Antisana, 12,000′. *Exp.* 36 millim. This species is unknown to me; structural characters examined by Prof. Karsch.

Page 160. *1348 *a*. **Polia canosticta.** (Plate XCIV. fig. 1.)

Mamestra canosticta, Druce, A. M. N. H. (7) xv. (April 1905).

♀. Head and thorax red-brown slightly irrorated with grey, the dorsum of thorax mostly grey; abdomen fuscous brown irrorated with grey. Fore wing red-brown irrorated with grey; subbasal line defined by diffused grey on each side of it, from costa to submedian fold; antemedial line indistinct, waved, bent inwards in cell, defined by diffused grey patches before and beyond it, forming a large patch on inner margin; orbicular and reniform grey, their centres defined by brown, the former round; an indistinct medial line somewhat oblique from costa to median nervure; postmedial line defined by patches of grey on outer side, minutely waved, slightly bent outwards below costa, excurved to vein 4, then incurved; subterminal line crenulate, slightly angled outwards at vein 7 and excurved at middle, with prominent series of grey patches beyond it, the apical one rather large; a terminal series of grey points; cilia slightly irrorated with grey and with fine pale line at base. Hind wing fuscous brown, the cilia ochreous; the underside pale irrorated with brown, a slight discoidal lunule and curved postmedial line.

Hab. Bolivia (*Garlepp*), type † in Coll. Druce. *Exp.* 42 millim.

Page 183. *1385 *a*. **Polia? læta.**

Hecatera læta, Mssn. Stübel's Reise, p. 145, pl. vi. f. 29 (1890).

♀. Head, thorax, and abdomen grey tinged with brownish; tegulæ with black medial line. Fore wing white, largely suffused with pale brown to the postmedial line; subbasal line represented by double black striæ from costa and cell filled in with white; antemedial line double filled in with white, angled outwards below costa, then oblique, slightly waved; claviform only defined by a slight white mark beyond it; orbicular and reniform small, with brownish centres and white annuli defined by black, the former round, the latter ill-defined below; postmedial line defined by white on outer side, waved, bent outwards below costa and strongly incurved below vein 4; subterminal line defined by somewhat wedge-shaped black patches before it below apex, at middle, and above inner margin; a terminal series of black points; cilia chequered grey and black. Hind wing white, the veins and terminal area tinged with fuscous.

Hab. Ecuador, Chaupi, 9500′. *Exp.* 28 millim. This species is unknown to me; structural characters examined by Prof. Karsch.

Page 187. *1394 *a*. **Polia lunolacta.**

Mamestra lunolacta, Smith, J. N.Y. Ent. Soc. xi. p. 17 (1903).

♀. Head and thorax fuscous mixed with black and with some whitish or greenish scales, the head with some grey; tegulæ with

slight medial line, and black line before the tips which are grey; abdomen fuscous. Fore wing fuscous mixed with black and with some whitish or greenish scales; subbasal line double filled in with creamy or greenish scales; antemedial line double filled in with greenish, obliquely excurved; claviform small, incompletely defined by black and yellowish or greenish scales; orbicular small, narrow, oblique, with slight pale annulus defined by black; reniform narrow, with rather prominent white annulus defined by black; postmedial line double, the outer line incomplete, bent outwards below costa, excurved to vein 4, then oblique; subterminal line whitish, defined by black scales or spots on inner side and a lunulate white patch above vein 1, rather irregular; a terminal series of whitish lunules; cilia yellowish at tips. Hind wing fuscous, rather paler at base; cilia whitish, with a fuscous line through them; the underside pale with dark irroration, a small discoidal spot, postmedial line, and terminal shade.

Hab. U.S.A., Washington, Pullman, Idaho. *Exp.* 27 millim. This species is unknown to me.

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*1426 *a*. **Hadena elæistis.** (Plate XCIV. fig. 3.)

Hadena elæistis, Druce, A. M. N. H. (7) xv. (April 1905).

♀. Head and thorax olive-brown mixed with some black; palpi with the 3rd joint black at sides, whitish above; frons with blackish bar with some white above it; tegulæ with some black near base and white medial line and tips; patagia edged with white; prothoracic crest rufous tipped with white; pectus whitish and olive; legs white and fuscous; abdomen rufous, brown at base, the ventral surface whitish irrorated with brown. Fore wing olive-brown, the subcostal nervure, median nervure, and vein 4 to just beyond postmedial line and vein 1 with purplish-white fasciæ; subbasal line represented by oblique white striæ from costa and cell, defined on each side by black, the black forming a streak in submedian fold to antemedial line, which is represented by two black points at costa and below the cell by a whitish line very strongly angled outwards on vein 1, defined by black on both sides in submedian interspace and on both sides below vein 1; claviform very elongate, and acute at extremity, defined by black and with oblique whitish streak above it; orbicular and reniform narrow and confluent below, with olive centres and yellowish-white annuli defined at sides by black, the former oblique oblong; traces of a postmedial line strongly bent outwards below costa, then oblique and placed on an oblique yellowish-white band from apex to vein 1, some dentate black marks before and beyond it with yellowish lunules on them representing the subterminal line; a pinkish band before termen; cilia brown, with black line through them followed by white. Hind wing whitish, the veins, inner and terminal areas

suffused with brown; the underside with the costal and terminal areas irrorated with brown, a black discoidal lunule.

Hab. N. Peru, Huancabamba, 9000′, type † in Coll. Druce. *Exp.* 36 millim.

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***1426 *b*. Hadena œnistis.** (Plate XCIV. fig. 4.)

Hadena œnistis, Druce, A. M. N. H. (7) xv. (April 1905).

♀. Head and thorax bright red-brown mixed with black and some grey; patagia with white stripes edged with black; abdomen red-brown slightly mixed with grey. Fore wing bright red-brown suffused in parts with black; the subcostal nervure and vein 1 streaked with purple-grey, the median nervure and base of vein 4 with white; subbasal line represented by a slight pale striga from costa and an oblique white striga below cell defined on each side by black; antemedial line pale defined on each side by brown, angled outwards below costa, inwards on median nervure, and outwards above inner margin; claviform an ill-defined black patch with traces of pale streak above it on base of vein 2; orbicular and reniform small, with rufous centres and white annuli defined by black, the former rounded, the latter oblique elliptical; postmedial line indistinct, slightly bent outwards below costa, excurved to vein 4, then very oblique and placed on an oblique pinkish-white band from apex to vein 1, a series of dentate black marks before and beyond it interrupted by yellowish-white lunules representing the subterminal line; some white points on costa towards apex; a purple-grey band just before termen, on which there is a fine waved black line; cilia chequered fuscous and brown. Hind wing fuscous brown, the interspaces of basal half paler; cilia pinkish with a brown line through them; the underside whitish, the veins, costal and terminal areas suffused with purple-pink and irrorated with fuscous, a black discoidal spot and slight curved postmedial line.

Hab. N. Peru, Huancabamba, type † in Coll. Druce. *Exp.* 40 millim.

Page 214. ***1431 *a*. Hadena calographa.**

Mamestra calographa, Mssn. Stübel's Reise, p. 140, pl. vi. f. 8 (1890).

♂. Head, thorax, and abdomen fuscous mixed with grey. Fore wing blackish; subbasal line represented by black striæ from costa and cell defined on each side by grey; antemedial line represented by two grey spots on costa, then by a black line defined on each side by yellowish, angled outwards on vein 1 and strongly bent inwards to inner margin; claviform only defined by an oblique yellowish streak above its extremity; orbicular and reniform yellowish, the former small, oblique elliptical, and conjoined below to

the latter, which is angled inwards on median nervure and has its centre defined by brown; postmedial line strongly angled outwards below costa and defined by greyish, then placed on an oblique rather irregular yellowish band running from apex to inner margin and connected with termen by a streak at vein 3; a series of pale points just before termen; cilia fuscous and grey. Hind wing white, the veins and termen tinged with fuscous.

Hab. Ecuador, Antisana, 12,000′. *Exp.* 38 millim. This species is unknown to me; structural characters examined by Prof. Karsch.

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1479. *Mamestra impia*, Püng. Soc. Ent. xix. p. 153 (1905).

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*1486 *a*. **Nephelistis conservulodes.** (Plate XCIV. fig. 5.)

Nephelistis conservulodes, Druce, A. M. N. H. (7) xv. (April 1905).

♀. Head and thorax grey mixed with red-brown; tegulæ and patagia edged with red-brown; abdomen ochreous dorsally tinged with brown, the anal tuft pale rufous. Fore wing golden brown irrorated with fuscous; subbasal line represented by a black point on costa; antemedial line indistinct, grey, oblique, from costa to vein 1; claviform only defined by an oblique yellow streak above its extremity; orbicular and reniform purplish grey irrorated with fuscous, with yellow annuli defined by black, the former oblique, open above and its lower part produced to an angle confluent with the reniform, which is rather narrow and oblique; postmedial line grey and very obliquely excurved from below costa to a small pink-tinged grey patch above vein 5 before the subterminal line, then hardly traceable, oblique and angled inwards on vein 1, some pale points beyond it on costa; subterminal line yellow, slightly sinuous, the area beyond it purple-grey; a terminal series of small black lunules. Hind wing yellowish white, the veins and terminal area suffused with brown; cilia whitish, brown at base. Underside of fore wing fuscous, the costal and terminal areas fiery red; hind wing whitish, the costal and terminal areas slightly tinged with red and irrorated with brown, a brown discoidal lunule.

Hab. Colombia (*Wheeler*), type † in Coll. Druce. *Exp.* 40 millim.

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1498 *a*. **Chabuata chipeta.** (Plate XCIV. fig. 12.)

Tricholita chipeta, Barnes, Can. Ent. xxxvi. p. 202 (1904).

♂. Head and thorax whitish mixed with grey-brown; abdomen whitish slightly tinged with ochreous-brown. Fore wing whitish thickly irrorated with grey-brown; subbasal line represented by some black scales below costa, the antemedial line by slight traces

in cell; claviform rather long and narrow, defined by black; orbicular small, defined by black, its outer edge produced; reniform represented by a narrow white lunule on discocellulars, a point at lower angle of cell, and an irregular mark angled inwards on median nervure, incompletely defined by diffused black; no trace of postmedial and subterminal lines; the veins of terminal area with slight dark streaks; some white points on costa towards apex; a fine dark terminal line. Hind wing white, the veins and terminal area suffused with fuscous; the underside with the costal area irrorated with brown, a discoidal point.

Hab. U.S.A., Colorado, Glenwood Springs (*Barnes*), 1 ♂ co-type. *Exp.* 34 millim.

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*1578 *a*. **Eriopyga faliginosa.** (Plate XCVI. fig. 14.)

Hyphilare faliginosa, Wilem. ined.

♂. Head and thorax fuscous slightly mixed with grey; base of palpi and fringes on legs purplish pink; abdomen purplish pink, paler at base, the anal tuft rufous. Fore wing fuscous irrorated with grey; a slight whitish mark on discocellulars; a fine pale line at base of cilia. Hind wing pale fuscous, the inner margin and cilia purplish pink; underside of both wings with the hair in cell pink.

♀. Head and thorax tinged with fuscous; fore wing irrorated with fulvous.

Hab. Japan, Yezo, Toshima, type † ♂ ♀ in Coll. Wileman. *Exp.*, ♂ 46, ♀ 56 millim.

Page 317.

1591 *a*. **Eriopyga hueca.** (Plate XCIV. fig. 13.)

Mamestra hueca, Barnes, Can. Ent. xxxvi. p. 198 (1904).

♂. Head and thorax ochreous white and ferruginous; abdomen pale ferruginous. Fore wing ochreous whitish mostly suffused with blood-red; subbasal line represented by white striæ from costa and cell, defined by deep red on outer side; antemedial line hardly traceable except from submedian fold to inner margin, where it is white defined by deep red on inner side; orbicular and reniform blood-red with white annuli, the former round, the latter constricted at middle; postmedial line white defined by deep red on outer side, bent outwards below costa, excurved to vein 4, then slightly incurved, approximated to the subterminal line, which is white defined by deep red on each side, dentate; the veins of terminal area with deep red streaks; a terminal series of small red lunules. Hind wing pale ochreous, the veins slightly tinged with red.

Hab. U.S.A., Arizona, Huachuca Mts., 1 ♂, co-type. *Exp.* 34 millim.

Page 322. 1599. *Eriopyga brachia*, De Joan. Bull. Soc. Ent. Fr. 1904, p. 290.

Page 348. 1639. **Eriopyga conar**, insert (syn.) *Himella infidelis*, Dyar, Pr. U.S. Nat. Mus. xxvii. p. 868 (1904), non descr.

Page 350. 1643. **Eriopyga** *affurata*, insert *Graphiphora* **communis**, Dyar, Pr. U.S. Nat. Mus. xxvii. p. 868 (1904), which has priority.

Page 359, for *Poliodes*, Hmpsn. (nec Roths. Lep. 1903) read **Poliodestra.**

Page 363.

1665. *Trichopolia* **serrata** should be placed in **Eriopyga**, after 1566. **E. agrotiformis.** S. Arizona (*Poling*), 1 ♀.

(Plate XCIV. fig. 11.)

Page 522. 1893. **Cirphis diagramma**, Beth.-Baker, A. M. N. H. (7) xv. p. 324 (1905).

List of unrecognized Species.

Agrotis saturnus, Streck. Lep. Rhop. & Het. Suppl. 3, p. 31 (1900); Dyar, Cat. Lep. N. Am. p. 166. ? *Eriopyga*. Wisconsin.

Anarta fumida, Græs. Berl. ent. Zeit. 1888, p. 365; Staud. Cat. Lep. pal. p. 218 ..... Amurland.

„ *lamuta*, Herz, Ann. Mus. Zool. Pet. viii. p. 82 (1903). N. Siberia.

Ceramica maryx, Guen. Noct. i. p. 344 (1852). ? *Physetica*. Australia.

Dianthœcia capsincoloides, Standf. Berl. ent. Zeit. 1893, p. 360; Staud. Cat. Lep. pal. p. 163. ? near *Polia bicruris*. Corsica.

„ *incerta*, Staud. Iris, ix. p. 258 (1896); id. Cat. Lep. pal. p. 164 ..... W. Turkestan.

„ *submœsta*, Möschl. Verh. z.-b. Ges. Wien, xxxiii. p. 294, pl. xvi. f. 8 (1884) ..... S. Africa.

Diaphone lampra, Karsch, Ent. Nachr. xx. p. 376 (1894); Bartel, Iris, xvi. p. 198. ? = *D. eumela*..... E. Africa.

„ *libertina*, Bartel, Iris, xvi. p. 197 (1903). ? = *E. eumela*. E. Africa.

Hadena abrupta, Ev. Bull. Mosc. 1854, iii. p. 189, & 1856, ii. pl. 2. f. 8; Staud. Cat. Lep. pal. p. 159. ? near *Hadena reticulata*..... Kirghistan.

Leucania acontistis, Meyr. Tr. N.Z. Inst. xix. p. 9 (1887); Hudson, N. Zealand Moths & Butterflies, p. 11, pl. iv. f. 14. ? near *L. unica* ..... N. Zealand.

Leucania alopa, Meyr. Tr. N.Z. Inst. xix. p. 10 (1887); Hudson, N. Zealand Moths & Butterflies, p. 12, pl. iv. f. 16. ? near *L. blenheimensis* ..... N. Zealand.

„ *angustipennis*, Saalm. Lép. Madag. p. 261, f. 252 (1891). Type lost ..... Madagascar.

„ *aureola*, Lucas, P. Linn. Soc. N.S.W. (2) iv. p. 1097 (1890). Near *Cirphis decisissima* ..... Queensland.

, *baziyæ*, Möschl. Verh. z.-b. Ges. Wien, xxxiii. p. 292, pl. xvi. f. 5 (1884) ..... C. Colony.

„ *claudicans*, Guen. Noct. i. p. 72 (1852) .... Abyssinia.

„ *eutherma*, Lower, P. Linn. Soc. N.S.W. xxvi. p. 644 (1901). S. Australia.

„ *exarans*, Lucas, P. Linn. Soc. N.S.W. (2) viii. p. 141 (1893). ? near *Meliana scotti* ..... Victoria.

„ *impuncta*, Staud. Rom. Mém. vi. p. 475 (1892), nec Guen.; id. Cat. Lep. pal. p. 191 ..... Amurland.

„ *internata*, Möschl. Verh. z.-b. Ges. Wien, xxxiii. p. 291, pl. xvi. f. 3 (1884). Near *Borolia rhabdophora*. C. Colony.

„ *multipunctata*, Druce, Biol. Centr.-Amer., Het. i. p. 261, pl. xxvi. f. 11 (1889). ? near *Cirphis pilipalpis*. Panama.

„ *obumbrata*, Lucas, P. Linn. Soc. N.S.W. (2) viii. p. 141 (1893). ? near *Cirphis uda* ..... Victoria.

„ *phaula*, Meyr. Tr. N.Z. Inst. xix. p. 10 (1887); Hudson, N. Zealand Moths & Butterflies, p. 11, pl. iv. f. 15. ? near *L. blenheimensis* ..... N. Zealand.

„ *purdii*, Fereday, Trans. N.Z. Inst. xv. p. 195 (1883); Hudson, N. Zealand Moths & Butterflies, p. 10, pl. iv. f. 11. ? near *L. sulcana* ..... N. Zealand.

„ *umbrigera*, Saalm. Lép. Madag. p. 258 (1891). Madagascar.

Mamestra afra, Baker, Trans. Ent. Soc. 1894, p. 39, pl. i. f. 7; Staud. Cat. Lep. pal. p. 158. ? = *Cardepia irrisor*. Egypt.

„ *alba*, Vallantin, Le Nat. 1893, p. 280; Staud. Cat. Lep. pal. p. 158. ? near *Polia consanguis* ..... Algeria.

„ *catephioides*, Wlk. xxxii. 665 (1865). Type lost. S. Africa.

„ *elsinora*, Barnes, Can. Ent. xxxvi. p. 197 (1904). Arizona.

„ *feildeni*, McLachlan, Journ. Linn. Soc. xiv. p. 112 (1878). ? genus *Ala* ..... Arctic America.

„ *immiscens*, Wlk. Entom. v. p. 127 (1870). Type lost. Mt. Sinai.

„ *intricata*, Saalm. Lép. Madag. p. 269 (1891). Type lost. Madagascar.

„ *lupa*, Christ. Iris, vi. p. 91 (1893); Staud. Cat. Lep. pal. p. 155 ..... Persia.

Mamestra mendica, Staud. Iris, vii. p. 272, pl. ix. f. 13 (1894); id. Cat. Lep. pal. p. 160. ? near *Epia silenes*. Asia Minor.

„ *mixtura*, Wlk. Entom. v. p. 126 (1870). Type lost. Mt. Sinai.

„ *ordinaria*, Wlk. xxxii. 664 (1865). Type lost. S. Africa.

„ (*Saragossa*) *seeboldi*, Staud. Iris, xiii. p. 109 (1900); id. Cat. Lep. pal. p. 160 ..... Spain.

„ *soligena*, Möschl. Abh. Senck. Ges. xiv. p. 45, f. 18 (1886). Jamaica.

„ *tarara*, Holl. Psyche, vi. p. 566 (1893) .. Cameroons.

„ *tetrica*, Græs. Berl. ent. Zeit. 1888, p. 325; Staud. Cat. Lep. pal. p. 157 ..... Amurland.

Melanchra alcyone, Hudson, New Zealand Moths & Butterflies, p. 24, pl. v. f. 14 (1898). ? *Morrisonia* near *stipata*. N. Zealand.

„ *asterope*, Hudson, N. Zealand Moths & Butterflies, p. 24, pl. v. f. 15 (1898). ? *Morrisonia* near *dotata*. N. Zealand.

„ *cæleno*, Hudson, N. Zealand Moths & Butterflies, p. 26, pl. iv. f. 39 (1898). ? *Morrisonia* near *lignana*. N. Zealand.

„ *exquisita*, Philpott, Tr. N.Z. Inst. xxxv. p. 246, pl. xxxii. f. 2 (1903). ? near *Polia pictula* ..... N. Zealand.

„ *grandiosa*, Philpott, Tr. N.Z. Inst. xxxv. p. 246, pl. xxxii. f. 1 (1903). ? *Morrisonia* ..... N. Zealand.

„ *maya*, Hudson, N. Zealand Moths & Butterflies, p. 17, pl. iv. f. 31 (1898). ? *Morrisonia* near *dotata*. N. Zealand.

„ *merope*, Hudson, N. Zealand Moths & Butterflies, p. 19, pl. v. f. 2 (1898). ? *Polia* near *pictula*.. N. Zealand.

„ *octans*, Hudson, N. Zealand Moths & Butterflies, p. 25, pl. v. f. 1 (1898). ? *Xylomania* near *natalensis*. N. Zealand.

„ *omicron*, Hudson, N. Zealand Moths & Butterflies, p. 22, pl. v. f. 42 (1898). ? *Hyssia* near *cucullina*. N. Zealand.

„ *umbra*, Hudson, Tr. N.Z. Inst. xxxv. p. 243, pl. xxx. ff. 7–9 (1903). ? *Morrisonia* ..... N. Zealand.

Mythimna imbellis, Staud. Stett. ent. Zeit. 1888, p. 28; id. Cat. Lep. pal. p. 194. ? *Eriopygodes* ..... W. Turkestan.

„ *luteomaculata*, Brem. Faun. Nord. Chin. p. 17 (1853). ? = *Cirphis flavostigma* ..... N. China.

Nephelodes rubeolans, Guen. Noct. i. p. 130 (1852). Type lost. Australia.

Noctua digramme, F. de W. Ent. i. p. 201, pl. 5. f. 5 (1820); Staud. Cat. Lep. pal. p. 160. ? *Euxoa* ..... Russia.

Orthodes calceolarius, Streck, Lep. Rhop. & Het. Suppl. iii. p. 33 (1900); Dyar, Cat. Lep. N. Am. p. 164. ? *Eriopyga*. New York.

Orthodes imora, Streck. Lep. Rhop. & Het. Suppl. i. p. 8 (1898); Dyar, Cat. Lep. N. Am. p. 164. ? *Eriopyga*. Wisconsin.

„ *majuscula*, Herr.-Schäff. Corresp.-Blatt zool.-min. Ver. Regensb. 1868, p. 148 ..... Cuba.

Polia obvia, Ev. Bull. Mosc. 1856, ii. pl. 2. f. 7, & iii. p. 77; Staud. Cat. Lep. pal. p. 159. ? = *Polia dentina* .... Russia.

„ *simplex*, Staud. Stett. ent. Zeit. 1889, p. 39; id. Cat. Lep. pal. p. 180 (*Mamestra*); Püng. Iris, 1902, p. 160, pl. v. f. 10 ..... W. & E. Turkestan.

Segetia biundulata, Motsch. Et. Ent. 1860, ix. p. 33; Staud. Cat. Lep. pal. p. 193. ? = *Eriopyga grandis* .... Japan.

Tæniocampa alamosa, Barnes, Can. Ent. xxxvi. p. 201 (1904). Arizona.

„ *chiklika*, Moore, A. M. N. H. (5) i. p. 234 (1878); id. 2nd Yarkand Mission, Lep. p. 11, pl. 1. f. 11. ? = *Hadula optima* ..... Yarkand.

„ *styracis*, Guen. Noct. i. p. 357 (1852); Smith, Cat. Noct. N. Am. p. 206; Abbot's figure is in the Boston Society of Natural History ..... U.S.A.

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